

April 1998

BOARDWATCH MAGAZINE

Guide to Internet Access and the World Wide Web

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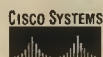
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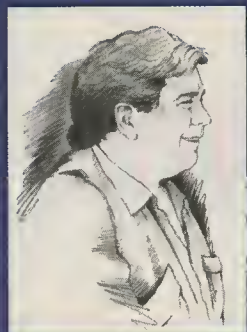
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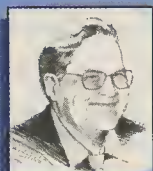
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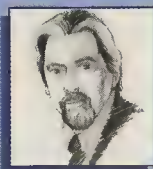
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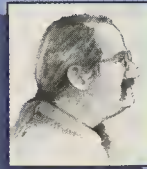
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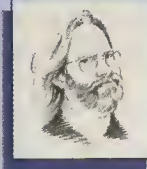
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Editor/Publisher

Jack Rickard

Associate Publisher

Brian Noto

Advertising Sales Manager

Bill Pettit

Technical Director

Gary Funk

Database Manager

Alan Christian

Editor-At-Fault

Bill McCarthy

Copy Editor

Todd Erickson

Contributing Writers

Richard Baguley	Thom Stark
John Dvorak	Paul Stapleton
Avi Freedman	Steve Stroh
Michael Greenbaum	Forrest Stroud
Durant Imboden	Scott Swedorski
Ric Manning	Jim Thompson
Doug Mohnhey	Wallace Wang
Doug Shaker	

Production Manager

Bill Gerardi

Graphic Design and Production

Marla Asheim
Daphne Brown
John Fellers
Kathy Meyers

Subscriptions/Circulation

Jennifer Blackford
Cathy Rougier

Advertising Sales

Donny Yoshida
Laurel Zimmer

ISPCon Information

Bob Holley
(800) 933-6038

Editorial Offices

8500 W. Bowles Ave., Suite 210
Littleton, CO 80123
(303) 933-8724 Editorial
(303) 933-2939 Fax
(800) 933-6038 Subscriptions
<http://www.boardwatch.com>

World Wide Web

<http://www.boardwatch.com>

Electronic Mail

Internet:

jack.rickard@boardwatch.com
subscriptions@boardwatch.com

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EDITOR'S NOTES

by Jack Rickard

A ROSE BY ANY OTHER NAME

This industry struggles with nomenclature and terminology so valiantly, and to such poor effect, that it reduces me to tears about every 30 days. I just had a call from a man furious with us for listing SAVVIS Communications' prices for a dedicated T-1 inaccurately. He had just called them, and been quoted that price for FRAME RELAY – not for a dedicated point-to-point connection.

Having just had my McBiscuit with McSausage and McEgg and feeling pretty fat, dumb, and happy, I took an interest in his plight and made a few calls. Indeed, he WAS quoted a point-to-point connection, using the Frame Relay protocol.

Many ISPs do provide connectivity through metropolitan "Frame Relay" clouds. The customer gets a line from the telco to the cloud. The ISP already has one. And using a private "virtual" circuit or PVC, they connect. But the connection is influenced by general cloud traffic in some cases and it is viewed as somehow not as good as a REAL connection using a direct leased line from the customer to the ISP location. With modern Frame Relay cloud products, even this is not entirely accurate, but the Frame Relay cloud has something of a cloud over it in the perception of the public.

Others, and often the same ISPs, offer, or also do offer, dedicated point-to-point connections using direct leased lines. In doing so, they generally use one of two PROTOCOLS to pass traffic over the line – the point-to-point-protocol (PPP) or the "Frame Relay" protocol. The choice is almost entirely based on what equipment the provider likes to use, and while there exist certain religious debates regarding the two protocols, I've read nothing persuasive indicating one is substantially better than the other.

So we had a service provider (salesperson, of course) and customer (even more clueless if you can picture it), both mouthing the same WORDS – "Frame Relay," and taking them for two entirely different things. The result was two people in violent, but largely unaware, agreement. Both terminated the call thinking they had had a conversation. Different planets – but neither this one.

Names of things are important. But there's no way to win. There isn't a day that passes without someone suggesting to me in the most urgent tones to change the name of *Boardwatch Magazine*. "You're not even about BBSs anymore" goes the chant. The years pass before my eyes and I shudder. How many miles, before I sleep... In the first place, *Boardwatch* largely predates the term. In 1987, there were a LOT of names for small online services, as well as forums on large online services. CBBS or Computer Bulletin Board System was actually the term coined by Ward Christensen, an

IBM employee in Chicago and personal computer hobbyist who put up the first online service on a personal computer. But they had MANY names along the way. BOARDWATCH largely labeled them all generically bulletin board systems or BBSs, for better or worse, by going back to the first one, and dropping the somewhat redundant "computer" part. This resurrection of historical terms is a recurring theme in how we name things in order to communicate this stuff effectively.

In the second place, we never were exclusively, or to my mind predominantly, ABOUT them. We covered all manner of grass roots, PERSONAL access to communications including FAX if you can believe it. It was a NEW thing in the mid-eighties for most of us. We actually reviewed stand alone fax machines and THEN it came to light you could "fax" directly from a PC, using rather specialized equipment, then separate from modems. We covered the triumvirate TRINTEX, which was eventually renamed PRODIGY at launch. We did lots of stories on THE SOURCE, DELPHI, COMPUSERVE, and even a dedicated service just for Commodore 64 owners – run out of Reston by a guy named Steve Case. AOL's move to become an ISP, you see, was not their first change of direction.

We did a LOT of stories about individual forums or BOARDS on CompuServe, Genie, and other services. We also covered "library" online research services such as Lexis, Westlaw, and others as they emerged. And we profiled cunning ways to get electronic mail from one service to another – in those days each service had an independent and unconnected e-mail service. We covered the initial connections to the Internet, how to tunnel e-mail from MCIMail to CompuServe using complicated addressing schemes to route through this back door. We covered what is today's PCS wireless – in the mid-eighties when Millimeter was demo-ing it and telephone companies wanted nothing to do with it and had foresworn it as the invention of the devil himself. We parodied a Bell South executive that insisted no one would ever need it, but if they did, the telephone company would have something like that for them.

We started regular coverage of THE INTERNET in 1989. The term *INTERNET* was not even universal at the time. DNS had actually been in wide use for less than a year. John Quarterman, who wrote the first book on the Internet, favored instead the term *THE MATRIX* and in fact that is the title of the book if you can find it. But Internet won, largely organically.

The term *BOARDWATCH* was not actually all that good of a name in 1987, and caused some confusion then. There was a BBS software company with a product titled PCBoard and we were confused with them a bit at first. But it was good enough, and unusual enough to be defensible. Today, it seems quaint and archaic. I keep it because it serves as a constant reminder of how long we've been there and how terms are so ethereal and changeable in an industry that changes daily. And a magazine that doesn't reinvent itself with each and every issue, can't hope to continue. It's an inside joke. If you don't get it,

you probably won't want to read it anyway as it gets a little techie for the masses.

The term *Internet Service Provider* is extremely interesting. The first list of places where you could access the Internet that we ran across was an electronic list titled *PANIX - Public Access Unix Systems*. In those days, you got a dial-up account on a Unix system and logged into a shell account. There was no PPP or SLIP. You could do e-mail, FTP, and telnet. We printed a regular list starting in 1990 of UUCP dial-up account providers - those that you could have your computer dial-up and do an automated Unix to Unix Copy Program session to exchange electronic mail and USENET news.

It has only been two years since we started our *Directory of Internet Service Providers*. At THAT late time, people offering access to the Internet had any number of terms to define themselves, including Online Service Providers, Online Access Providers, Web Access Companies, Internet Access Companies, and most of these terms had grown sufficiently to become acronyms, OAP/IAP, etc. We had long discussions about just what to call them in our first *Directory* in February 1996 - we centered on the term *Internet Service Provider* or ISP, something we had been using in *Boardwatch Magazine* for several years somewhat casually.

Two years later, the term IS *ISP*, for better or for worse. But it had problems from the start. How do we differentiate a local dial-up ISP from a national network? We chose to revive the term *BACKBONE*. At the time, backbone had been used to describe a type of network that had a main trunk transiting some geographic span, with branches off of it to areas on either side. It looked kind of like a fish skeleton fossil, and hence the term.

But nobody designed networks that way anymore. The actual architecture was of MESH networks with full and partial mesh networks being the norm for Internet companies - full mesh being the ultimate with all major hubs interconnected with all other major hubs. Telephone networks were largely RING networks as the favored topology and SONET RINGS being the network of fashion there. The original National Science Foundation network linking 13 universities and supercomputer centers was actually a "backbone" architecture originally. Eventually, even it wasn't a "backbone." But we felt that the older, nearly archaic term of *BACKBONE*, applied to the "NSFNet Backbone" would be the most communicable term to use in describing a company with a national network because it was an older term and had a certain concrete imagery to it.

But we made it up - or at least revived it from the slag heap. In fact, we were initially offered "corrections" by several knowledgeable network engineers that their networks were not technically backbones at all. I agreed, but in the interests of communicating the subject with a generic umbrella term, we hewed to "backbone," however inaccurate it might technically be to any one, or in fact all, networks.

Incredibly, I had a network engineer from a major national network this past week call to tell me I was "clueless" and didn't even know what a backbone WAS. I listened in stark amazement as he described it to me - or at least what he thought it was. The heart of the conversation was that we couldn't be measuring "backbone performance" because a "backbone" was thus and such and did this and that and what kind of moron was I anyway? It was one of those epiphany moments when all of your adult life becomes concentrated to a momentary point. I live in a madhouse where the inmates have taken over the asylum and my telephone screeches in spangalese gibberish.

I am absolutely certain that I could make up a word entirely from scratch - a FLAVIS WAVEN. And within a year of printing it, I would have some backwater jackoff on the phone telling me how he was designing FLAVIS WAVE's 20 years ago, and how I knew NOTHING about FLAVIS WAVENs, and was in fact misusing the term. If you can ever see the full circle dance of how terms are coined, come into use, and eventually misuse, it is utterly astounding what comes out the other end.



My purpose here is not to impress you with all the terms "invented" at *Boardwatch*. Most of them in fact were stolen and/or in a sense "reused" or "resurrected" from obscurity somewhere. We look for terms of concrete imagery that communicate. The problem is that terms are important. Americans "think" in English, and as the language evolves, it actually affects our thinking. But our industry evolves as well, and terms gradually lose their meaning or become almost misleading. It's not limited to "Frame Relay," "backbone," or even "Boardwatch."

We HAD to come up with something to call Internet service providers. But what I see today is another quantum shift in zone that makes the term misleading, and indeed potentially dangerous if ISPs think of themselves as ISPs.

We are entering an era where virtually ALL of communications as we know it is being sucked down a vast whirlpool centered on the heads of about 5,000 Internet service providers. And it points to a future of thousands of boutique communications companies that do voice, video, data, graphics, and all other communications over an enormous network. ALL communications. And these thousands of companies not only won't devolve into a handful of giants anytime soon, but will actually fracture further into MORE such companies. It is inevitable and if it hadn't already happened, we'd be struggling to invent it today. It is as predictable as rain, which causes me much amazement at the number of predictions of demise and consolidation over the past three years from the analysts and seers at the various groups who live on making predictions.

The drivers here all center on two factors. First, the incredible evolution of communications technology happening at the moment, and second at the amount of customer support necessary to deploy these technologies.

Companies like Cisco Systems, Bay Networks, Nortel, Lucent Technologies, IBM, Siemens, having been innovating in a FRENZY and acquiring technology by acquiring companies outright in the HUNDREDS. This is all an attempt to maintain double-digit growth rates at a size of TENS OF BILLIONS in annual revenues which is extremely hard to do. If you sell a million dollars worth of stuff in a year, and grow by 20 percent, you have to add \$200,000 in new sales - easy. If you sell \$6 BILLION in a year, to still grow 20 percent, you have to add \$1.2 BILLION in new business to maintain that growth - and that's almost impossible to do - unless you simply gobble up every shiny techno-toy you see.

The result is product lines so wide, that they are unmarketable and uncommunicable - almost unfathomable. Cisco Systems probably has over FIVE THOUSAND different products on the shelf now. All are extremely specialized, extremely technical products. It would cost MILLIONS and tens of millions of dollars, just to describe and educate the market on ONE of them. So they are reduced to developing their "brand"

in the hopes that when someone has a communications problem, they will call. To even list the stuff is impossible in print or catalog form. This is the real driver behind Cisco's move to put half their sales on the web. They can actually DATABASE their product line and knowledgeable customers can "get there from here."

If you're less knowledgeable, you have to contact Cisco and hope that one of their sales engineers has an idea. There AREN'T any sales engineers at Cisco even passingly familiar with the whole product line. But if you can sort of wave your arms and describe the problem, he might know somebody who knows somebody.

And this scenario is repeated at Bay Networks, at Lucent, at Siemens, at Nortel, at Ascend. You think merger and acquisition activity among ISPs is high? It's a backwater. These companies are buying companies as commodities – just to get the people and the techno-toys.

The result is an enormous opportunity for the public to gain solutions to every communications need, no matter how specialized, or how magical. The problem is it is all locked up in a box at Cisco *et al* and there aren't a handful of people who know how to get the stuff out.

Into this maelstrom ride an amazing group of entrepreneurs, who fearlessly, probably from broad ignorance of the task they are attempting, strive to connect markets with communications technology. Actually, they are just looking for a "seam in the zone" to get some of the perhaps \$300 billion spent annually on some form of communications in this country. There are traditional local exchange carriers (LECs), competitive local exchange carriers (CLECs), interexchange carriers (IXCs – long distance companies), cable television companies, satellite companies, wireless companies, pager companies, power utility companies, and of course ISPs. Want some gasoline on this fire? Let's let a couple of small local companies make a fortune in e-commerce by establishing a national presence on the web. We could call them AMAZONS if you like.

The problem is, it is just now emerging that EVERYTHING is ultimately going to converge on an Internet that may or may not be capable of absorbing it. I think voice over IP is going to go faster than I had originally thought. Huge companies like Lucent and Nortel are seizing on enabling technologies for this with an unpredicted degree of enthusiasm. HDTV is going to reduce video to digital universally and it's a matter of bandwidth before TV gets sucked down the maw of this monster.

SECOND FACTOR. It's icky. Every customer wants solutions – better/faster/cheaper and they have money to pay for it because they're already paying too much for communications that aren't getting the job done. But do they have to learn BGP route advertisement theory to get it? An IOS maven in every home? From the middle aged homemaker who wants to do e-mail with the grandkids, to General Motors, they WANT solutions, but the solutions are so technical and so dicked up nobody even bothers to go to the expense of writing huge technical manuals anymore. If you don't already know what the product does, how to install it, and how to operate it, you can't buy it – unless someone is willing to do it for you or at least help you do it. As any new hire technical support person at any small ISP knows, there ARE ways to hose up even a basic dial-up connection to the Internet. Are we really still dealing with modem initialization strings circa 1998? Can this even BE happening? Am I dreaming?

So I see a future, not just of Internet access, but of communications access, driven by a treasure trove of new technology and an insatiable customer demand, but it has to be delivered with OBSESSIVE/COMPULSIVE customer service and thor-

ough specialization and expertise in specific markets and specific technologies. That kind of customer handholding is very difficult to scale. The only solution is thousands of small, specialized communications companies. We need MORE of them. We don't have ENOUGH. There is actually a SHORTAGE right now. You can't hire anyone to do this stuff – not for money anyway. You almost have to marry into technical expertise these days. And they won't stay with you even then.

And somehow, someway, it all wants to be tied into one gigantic packet network. We'll call it the Internet, but the companies playing this game need to start thinking of themselves as communication SERVICE companies. They need to think outside the box of just "Internet Access" and start thinking about specialized communications products and markets, and building relationships with customers they know and understand. The barriers to entry will remain very small. The rewards for those that can identify markets and pull technology out of the maw of these technology companies to serve them, will be immense – utterly immense. It is THE frontier of opportunity for this generation.

And there can be literally thousands and potentially tens of thousands of them. And ironically, we'll probably wind up calling them *Internet Service Providers*, which makes about as much sense as calling **Boardwatch** *Boardwatch* or a backbone a *backbone*. For that matter, who imagines that "telephone" companies have much to do with telephones anymore. But *Communication Service Company* is just too vague, too wispy, and not of sufficiently concrete imagery to work.

And for the huge corporate market? Let me let you in on a little secret. Every public ISP in the country gets a copy of **Boardwatch** for free. And we still have over 20,000 paying subscribers. Ever wonder who those people are? If you are a small- to medium-size company, and you provision a circuit to an ISP, any ISP anywhere, and bring the Internet into a room in your company, you become an ISP. Immediately other employees want to dial in from home and ride the company line for free. Others want to put up a web site. Somebody else can't get their browser to work. And within three days, the person in that company that anyone else in the company would call on the phone if the Internet goes down, becomes an ISP. We don't even HAVE a name for those guys. I think our sales guys are calling them *Internet Technical Gurus* or ITGs for the usual want of a better term. But they're the other end of most of the dedicated circuits in the country. And they don't even HAVE a name. They have a magazine; they just don't have a name.

When does it all end? At precisely the point where the technological innovation slows to a set of "standard" technologies, and the usability of those technologies reach the point of "plug and play" like yesterday's telephone handset. I don't see either, much less both, of those scenarios in any near time frame over the next five to 10 years. The home dial-up market probably WOULD reach it within another couple of years, but home users want more bandwidth. So it won't even happen there. Another huge opportunity for wealth and confusion.

Convergence is real. Consolidation is illusory. And a rose by any other name might smell as sweet, but how the hell would you find one in the yellow pages?

Jack Rickard

Editor Rotundus (It means fat writer – I made it up to spoof a hopelessly full of himself "editor emeritus.")





Letters to the Editor

Boardwatch Magazine
8500 W Bowles Ave Suite 210
Littleton Co 80123

LETTERS TO THE EDITOR

Address correspondence to Letters to the Editor, *Boardwatch Magazine*, 8500 West Bowles Ave., Suite 210, Littleton, CO 80123; by fax to (303) 933-2939 or by e-mail to letters@boardwatch.com

LETTER TO JACK RICHARD

Dear Mr. Richard:

After reading *Boardwatch* over the past several months, I am still amazed at the fact that you seem to have more insight into what is going on in the telecommunications industry than the top level executives and financiers in this industry.

In last month's edition, you stated that the big push in 98 on would be to make the Internet more reliable. Is this why we are seeing the big push in modernizing LAN/WAN infrastructure?

Do you envision the Federal Government getting involved in the building/modernizing of LAN/WAN infrastructure?

Also, I would beg to ask your opinion on the following:

If you had \$50 Million to \$100 Million in capital, and you were going to spend it in the telecommunications industry — where and how would you spend it??

Would you buy tier2 and tier3 resellers? Would you buy companies which are the leaders in voice over IP technology?

Would you buy telecommunications construction companies?

What would you do in order to generate long term growth and revenue?

Your thoughts would be greatly appreciated.

Kevin Rob,
its6@tpoint.net
Info Tech Services

Dear Mr. Bob:

The big push in modernizing LAN/WAN infrastructure has to do with reliability but also simply with the next generation

of technology that can handle more circuits in less footprint, and often offer higher speed. 100 MB Ethernet is pretty much a done thing, we actually have a couple of ISPs playing with GIGABIT Ethernet internally.

Where would I spend it Kevin? On printing more pages of course and sending out more magazines. That's what I do. There are good reasons why I do it.

Voice over IP is going to be a tremendous area of opportunity largely because of the huge overhang of a \$100 billion legacy voice billing system that is hysterically historical and makes approximately no sense at all currently. It's a system held in the air by wishful thinking and regulation at this point, both of which are eroding quickly. It makes it a huge area of opportunity simply because it is suspended aerially by stupid decisions of the past and no one knowing quite how to put the beast out of its misery. Voice over IP could.

But if I were looking at this market as an investor, I would note the increasingly specialized nature of both available communications technology, and market demand, and conclude that this was destined to be a classic service oriented business. I would ignore topology, and look for companies at all levels and in all niches that were consummately focused on customer service and building strong relationships with client affinity groups. And further noting the critical labor shortage that almost all segments already face, and which can only worsen in coming months, I would even throw that out the window in favor of specifically talented and gifted people. In other words, find the companies operated by and employing the best people, and you have found a winner. A great product, based on great technology, in a great niche, with great investment potential, can get outmaneuvered and forced into irrelevancy in less than 30 days if it

doesn't have some pretty smart other mother's sons running it and laying awake nights trying to figure out how to make it run again tomorrow.

I know this sounds pretty bizarre, but I really believe it. Invest in good people, and let the technology take care of itself. The communications business today looks very much to me like a hurricane. You're looking for good sailors sailing good ships in a hurricane, not attractive waves to leap into.

For what it's worth.

Jack Rickard

♦♦♦

FUZZY "TIER-1" ISP CATEGORIES

Dear Jack Rickard, Editor:

Happy New Year to you and your team! I hope 1998 proves to offer continuing success to your magazine!

I have just one question that increasingly confronts me these days - ISPs referring to themselves more and more as "Tier-1" level ISP providers, with DS-3 backbone access. This informal labeling is misleading, since DS-3 backbone access by itself does not a "Tier-1" ISP make. Rather, I understand the Tier-1 term refers to direct access to MAE-West or MAE-East or other NAPs, and only six ISP carriers fall in this class, inc. GTE-BBN, TCG-CerfNet, WorldCom UUNET, MCI Internet, SprintLink, ATT Worldnet. Would you kindly clarify this situation? It would be helpful to all involved if your quarterly ISP directory would reference such terms as applicable.

Thanks!
V.P. Dimone
Account Executive

Good question VP. I find it a little ironic that I would be called on to answer it. We do not recognize Tier 1/Tier 2 as a definable term, and you will never find it in Boardwatch Magazine or the Boardwatch Directory of Internet Service Providers – at least until it is definable. It is a sales and marketing term used to cause you to buy MY service over someone else's.

DS-3 is the high speed trunk du jour as DS-1 was and as OC-48 undoubtedly will be. It has no stable meaning with regards to backbone size. You note only six ISPs have direct access to MAE-West or MAE-East – this is empirically and demonstrably NOT TRUE. Of our 39 backbones profiled in the current directory, I would say 37 or 38 qualify by that criteria. SAVVIS Communications has eschewed direct connection to the official NAPS – opting instead for a private NAP architecture of their own device. ALL other backbones profiled are connected at either MAE-EAST or MAE-WEST and most to both. Further, MAE-WEST wasn't even one of the four official NAPS originally. PacBell has a NAP in San Francisco, Ameritech AADS has one in Chicago, and Sprint operates one in Pennsauken New Jersey. MAE-EAST was also belatedly added as one of the official NAPS when the National Science Foundation established the NAP structure.

We talk about national backbone operators and look for presence at multiple NAPs, 24 hour Network Operations Center, leased or owned trunks in at least five geographically diverse cities, and the offering of certain standard products such as 1.544 Mbps T-1 dedicated links to define "national" backbone operators. I understand this drives MCI and Sprint bonkers, as they would prefer to each and severally be the only REAL backbone operator in the game. But we have never bought into the "Tier 1" concept, and continue to view it with some tongue in cheek amusement, but in any event don't concur with your MAE-EAST or MAE-WEST presence definition.

I don't know that this helps. Our best shot at diagramming a top level construct for the Internet is in the Directory under National Backbone Operators. It's admittedly imperfect. But the Tier 1/Tier 2 construct is laughable.

Jack Rickard



READY, FIRE, AIM

Dear Boardwatch:

The long-awaited arrival of the ITU V.90 modem standard finally allows the industry to replace competitive marketing rhetoric with objective information about 56 Kbps technology. Given this opportunity it is unfortunate that Boardwatch would release the results of a modem connect-rate study whose ill-conceived test methodology will only renew uncertainty and confusion about 56 Kbps modems among ISPs and their customers. Boardwatch would have been of significantly greater service to its readers if it had focused on impact of the new V.90 standard.

In your recently published "Busy Signal" study, Boardwatch implies that it has evaluated a random and representative sampling of K56flex and x2 dial-up connections, and claims universally superior performance for x2. What Boardwatch fails to mention is that the study is based entirely on dial-up connections from a single, atypical site – hardly applicable across the tens of millions of locations nationwide from which Internet users make connections every minute of every day.

Even after months of 56 Kbps "marketing hype," it is fairly well understood that different line conditions favor different 56 Kbps approaches – that is, K56flex performs better under certain line conditions, x2 under others. We even spent considerable time with Boardwatch during the course of their study reiterating these widely understood concepts and explaining the flaw in their study. Yet Boardwatch persisted in disregarding the significance of two key 56Kbps performance variables: the behavior of the local loop and the behavior of the local central-office switch to which the client modem is connected. Boardwatch simply used the same line to call ISPs, over and over through 145,000 connections. At Boardwatch's location, local line conditions happen to favor x2. Yet Boardwatch chose to then make the illogical assumption that performance observed from their single atypical location could somehow be extrapolated across the line conditions of all known locations nationwide. (That's like testing the comfort of windbreakers vs. winter parkas in Hawaii day after day, and then making the assumption that windbreakers will be the best solution for Alaskans because people won't get too warm when they're wearing them).

Rockwell spoke to the same ISPs that Boardwatch included in its study. We replicated Boardwatch's tests from our Newport Beach, Calif., location. The result? We got steady connect rates at an average of 48 Kbps. This compares to the 45.2 Kbps Boardwatch reported for x2 ports, and the 30.8 Kbps they reported for K56flex ports. Are we going to trumpet this to the world? No! It's a location-specific result that depends entirely on the behavior of our local loop and nearby central-office switch.

The new V.90 standard's adaptive constellation scheme will be much more adaptive to line conditions. Even with V.90's advances, a Rockwell-based or 3Com-based modem may continue to be the superior choice given specific line conditions at a given client-side modem location. The place from which a connection originates has the greatest influence in any assessment of 56 Kbps modem performance – whether V.90, x2 or K56flex. If Boardwatch's study showed low K56flex connection rates initiated from locations across the country or around the world, then Boardwatch would have a point. But this is not the case. Of all the magazines that should have gotten this right, it should have been Boardwatch.

Signed,

Dean Grumlose
Product line manager
Central site products
Network Access Division
Rockwell Semiconductor Systems

Dean:

I was a little amused to hear from your PR babelet demanding that we print your reaction to our March article in the April issue. Here it is. The problem, of course, was the request and letter were from late February, before the article was quite out or you had had a chance to read it. Ready, Fire, Aim. It appears to be the order of the day in 56K.

The study and data are quite interesting, and I do confess I'm not absolutely certain what they mean either. This was why I contacted you early in the game and provided the database. I AM certain it doesn't mean what you say it does.

Our lines and CO are not in fact atypical. They're real typical. And we know quite a bit about them. We're 12700 feet from the Columbine CO – not close, and not fair away as these things go. But it



Internet

You're on
Your own.

Hello Dan,
Welcome to the Web.

Don't forget your mother's
birthday on the 19th.

ONE WAY

THEIR
OWN WAY.

The Web is a journey. How would your customers like to travel?

Customers come to you to get somewhere—the Web. So you point, and off they go. But what if there was a way to make it more personal? You could show them the sights. Remind them when to get gas. If they're into Thai food, point out the best Thai places along the way. Your customers would get where they wanted to be but the trip would be a whole lot more fun. And who would the hero be? You.

Welcome to Planet Direct.™ Partner with us and your customers won't just follow some lonely road into cyberspace. They'll take a personalized, customized trip to the best places on the Net. Our content partners are some of the best around, like Reuters, Sports Network and PC Quote. And we offer over 30,000 local links—more useful, close-to-home information than anyone.

You'll give your subscribers interesting, entertaining, relevant content that's personally organized and easy to use. You'll have the edge that will help you win. Especially against the big guys. And it's completely free. Over 250 ISPs already know that with Planet Direct, their customers are having a great time on the Web. So they can focus on the rest of their business.

And did we mention the money? Partnering with us gets you into the best revenue sharing plan of any Web service. So don't just send them on the same old ride. Get personal with Planet Direct.

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Where the Web gets personal.

was important for our "single location" to be a constant, and specifically NOT a variable. The question, of course, is: is it a good constant.

We've done several side tests and continue to do so. The most recent was 14700 calls to Peak to Peak Internet. These were a local call in a 303 exchange, but to a different CO than the Columbine CO we're attached to. Using three different modems, we achieved an average K56flex connect speed of about 43 kbps with an impressive number of calls in the 48 Kbps band.

It is absolutely true that these modems seem sensitive to variations in line quality. But we've pretty effectively eliminated the local line as a variable that favors one modem over another.

The intrinsically interesting thing about these tests was the large number of DIGITAL paths involved. That is, from the local CO, to a mix of both other local CO switches and across the long distance network (Sprint) to Cs across the country. We had some 323 individual locations, dialed over a 30-day period. You can take any three or four of these and prove anything you like, including overwhelming superiority of K56flex over x2 if you like. The magic is in the number of different digital paths. It looks to me as if x2 simply works over a wider variety of lines than K56flex.

There is some legitimate question as to what difference it makes – these are 80 percent long distance calls in a market where 99.99 percent of callers are making local calls. Partly, we can't nail a significant difference between the 20 percent of calls made to Denver local numbers and the 80 percent made long distance. If LD makes a difference, why doesn't this show up? Secondly, why, in a network that is clearly digital from the Columbine CO right up to the ISP equipment wherever it is, does x2 show so much better?

From early January, you alluded to a vast body of test data Rockwell has that proves a very different story. I never did get to see any of that as you know. Now you have a vast body of data from your location to the same ISPs we dialed – replicating our tests – that indicates an average connect speed of 48 Kbps? And you don't want to push it because it's location specific? As noted, I don't agree that the local lines are that much a part of it. So send it in. I'll push it. We'll publish it. We love data.

HAD you read the article you are purportedly responding to, you would be aware of my views on V.90. We think, that to even a greater degree than we are accustomed, this is a client-side modem driven function. The dialing modem requests a test tone, does the analysis on the tone, selects the constellation, and instructs the central site equipment what data constellation to use in sending data in this asymmetric downstream connection. Most of the intelligence used to analyze the received tone and map around the digital topology variances – the actual constellation used – would appear to be proprietary and native to the client modem. So V.90 isn't going to change much. It appears we are still going to have different V.90 modems with potentially very different performance abilities.

Finally, it does NOT appear that the place the call originates from is the overriding factor. Sure, we could pick 450 locations and use them to dial into the SAME ISP – the same test but in reverse. But we didn't, and probably won't. If your premise holds water, then we should have gotten the SAME results no matter where we dialed, from this single location. We didn't. In fact, what had us going in a circle was the variance. Indeed the fastest call of the test was a K56flex call at 54,000 bps. We just couldn't do it very often. Since the local analog loop was identical for each of 145,000 calls, and that is the MOST influential part of it, why did the results wander all over the map from 2400 bps to 54,000 bps? It just isn't so. The local loop was an equal constant, and the results were the result of wide variations in digital network topology associated with the destinations – not the local loop.

Bottom line is Boardwatch DID get it "right" as far as right and wrong goes. I'm still a little puzzled by what it means or why it came out this way. We would be extremely interested in the results of your replication of our test from your Newport Beach location, assuming this was actually performed, and we think our readers would be too. We did a test, and we have reported both the results and how we did the test. But it's not a religion. It's a process. I would like to see you test both x2 and K56flex to the same POP list we used, from your Newport Beach location in 100-150,000 call quantities. We'll be happy to publish the results.

The point is real world testing. Not tests across the room in a lab, or from one point to two or three selected locations, which is almost all of what we had seen previous-

ly published. We think the 90 biggest ISPs across the country is a good, if somewhat arbitrary, sampling. Maybe we can get Rockwell, Livingston, Ascend, Hayes, Zoom, and 3COM to all run the test to the same POPs from different locations. I've got the software and the database. You need a couple of machines with modems and non-PBX telephone lines and somebody to rotate the lines across the modems once a day. It's pretty straightforward actually. We might even be able to do something exotic like tie all the tests into a central database across the Internet and connect it to a web page to let everyone watch day by day.

That's what we do Dean. Watch.

Regards;

Jack Rickard

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SPAM

Dear Jack:

Great Magazine. I'm not in the business but have been a subscriber for a couple of years and a reader for a lot longer. This note is on the subject of the spam debate. I've meant to write to you on many other occasions but never got around to it. Tell me what you think of this. It is very simple but could be effective, I think.

The problem is, as I see it, not so much reputable companies sending spam, but individuals and disreputable companies who spam using a false e-mail address. (After all if you are spammed by someone with a correct return e-mail address you can flame them or simply set up a filter rejecting e-mail from them in the future.) My solution would be to simply pass a law requiring all e-mail to have a correct return e-mail address. No serious penalty, just a ten or twenty dollar fine. Such a law might not even have to be enforced. Even nimrods like spammers should be given pause when their 10,000 address spam could possibly result in a 100,000 dollar fine. (10,000 e-mails x \$10) If it does become necessary, the FBI or some other law enforcement agency could set up an e-mail address where (no return address, or false return address) spam could be forwarded. Filters could be set up so that only large offenders are prosecuted. Say 500, 1000, or even 5000 identical e-mail spams. Get a few of the worst offenders first, then if spam still remains a prob-

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lem, continue to lower the number until it simply becomes too much work and too expensive to continue spamming using a false return address.

This would also leave service providers out of it completely, no muss no fuss.

P.S. If I'm missing something, I wouldn't be surprised. If this won't work, please enlighten me.

Regards
K. Owens

K.

Interesting idea. I'm onboard. But I can tell you from experience with the caller ID debates of a few years ago that the privacy advocates will never let it fly. Some portion of our population views anonymity as a right of privacy. There have been somewhat popular mail forwarders for the express purpose of preventing the identity of the mailer being revealed. The Computers, Freedom, and Privacy crowd would have a group aneurysm at the thought of what you propose.

As for me, if you can't sign your name to it and have your mother read it in public next Thanksgiving at the meal, don't click the send button. But it's not the prevalent view. I view the drafting of laws regulating things with deep suspicion and grave hesitancy. That doesn't mean never do it. But care is certainly in order. It is very easy to try to cure one problem, get 99 percent of the population to jump through some very inconvenient and even expensive hoops, and wind up with the original problem plus seven new ones that you hadn't even thought of. Running the world through legislation is kind of like trying to pick up a glob of metallic mercury from a wax tile floor with a pair of chopsticks. It's entertaining, but also frustrating.

But I do agree, a minimum solution is to require proper identification of sender with all e-mail. And as far as I'm concerned, you can make it a felony.

Jack Rickard

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CAN PROXY SERVERS SAVE TODAY'S INTERNET?

Hi Jack-

I just wanted to share an idea with you and your readers that I think, if taken seriously, could really help the Internet in a big way.

We offer service to small businesses who don't really want or need 500.00/mo worth of Internet. Basically the service consists of us installing Wingate, mDaemon (for e-mail), and a single modem or ISDN connection to us so that their entire office can have access to the internet and e-mail (both Internet and internal).

After working with Wingate a bit, it seemed like a great idea how it allows you to cache the most frequently used pages, especially since their bandwidth is limited to one modem. After giving it more thought, we figured we'd give it a shot here at our ISP. We set up Wingate's unlimited version on a Pentium 233 and configured it to cache 1GB of the most frequently accessed pages. It is unbelievable how many users have proclaimed their happiness! In addition, there is a significant reduction in the usage of our circuit to the net. For a lousy few bucks, the payoff was two-fold. Users are happier (even the ones that don't use it are happier because the ones that have reduced the WAN traffic) and because Wingate has reduced WAN traffic, it allows us to get more bang for the buck for bandwidth.

My feeling is that there is a significant amount of redundant data bouncing around the net. Imagine even if just large companies such as AOL would install massive Proxy Servers, not to mention the rest of us small ISPs. I think it is accept for one to think even a small group-effort could be affective. What do you think?

Rick Kosick
Modern Development & StarLinX
Internet Access

Rick:

You probably missed my Cache and Carry Internet editorial. I'm becoming a bit of a cache fan. Today's latest. I had made up an estimate of 80 percent of web traffic from 20 percent of web pages. Admittedly, this is just another application of the 80/20 rule and could have been true or total BS. We just walked through an exercise with a major Internet Service provider who took exception to this statement to prove it one way or another, at least on a local basis. Of 466,000 hosted web page files (not pages -files), 5.8 percent of them accounted for 85.4 percent of the requests received in a day. We didn't carry it down to byte counts or file sizes. But the asymmetry of the web is probably far beyond even what I had put forth as a breathtaking assertion.

Caching shows promise. It's no panacea, and spawns some gritty little problems of its own. But I think it has smoke.

Jack Rickard

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COMMENT ON "PENNY PER PIXEL FANTASIES"

A very well written article! However, I would like to comment on your evaluation of telephone traffic, specifically the statement that: It takes about 24 KB of data to do a second of voice in compressed, and not terribly good, form.

The current telephone system filters frequencies between 300-3500 Hz. Equalized program lines supporting 5/8/10/15 kHz are available to broadcasters for a premium, but the lines in your house are only good to 3.5 kHz.


3.5 kHz must be sampled at 7k samples/sec (3.5 x 2). That's at 8 bits/sample... at 7kHz, you won't notice an appreciable difference going to 16 bits/sample. If you do go 16 bits/sample, that's still only 14kBps uncompressed. Add 1/4 FEC (forward error correction) and you need 17.5 kHz. Using a modest 4:1 compression algorithm (at 3.5kHz, who cares if its a bit lossy? Do 6:1.) your 14kBps drops to 3.5kBps, plus 1/4 FEC = <4.5kBps.

Double the result since it's a two-sided phone call and we're not talking simplex like on walkie-talkies. < 9kBps.

Of course, this only applies to voice, and would wreak havoc on a modem call on the same line. Quality would remain about the same as it is on the phone systems today (standards set in the VERY early days), certainly not up to the higher quality one gets off AM radio (10kHz bandwidth, 5kHz audio), FM radio (75kHz bandwidth (stereo), 30kHz per channel, 15kHz audio per channel), or CDs (44.1kHz bandwidth per channel, 22.05kHz audio per channel) [Broadcast examples, coz I'm a former broadcast engineer and those numbers spring quickly to mind!]

Your comments on SPAM in that same article are well thought-out and hopefully will be considered throughout the industry. I found your page via a link from vix.com; a single complainant who received a single piece of spam attempted to get our address added to the black-hole. That's *dangerous* IMHO.

Best regards,
Kevin McKinnon,
kevinmck@downco.com



Teach your Internet customers how to **fly.**

With transparent Web caching from Mirror Image. ISPs and corporations—offer your customers faster surfing while slashing costs and network congestion. Mirror Image Internet delivers the industry's most complete Web caching solution. We've combined the best transparent caching technology with our cache management service. We're also deploying large secondary caches at key Internet access points. The result? Shared community access to content and phenomenal bandwidth savings—as much as 75%.

So now you can offer your customers significantly faster surfing speeds and guaranteed content freshness. All at major cost savings to you. The bottom line? Happier customers. And happier ISPs.

To see how Mirror Image Web caching can help your business take off, visit our Web site at:
www.mirror-image.com, or call us at 800-353-2923.

Turbocharge the Web.
www.mirror-image.com

mirror image
mirror image

Network Engineer
Dowco Computer Systems

Kevin:

I was ripping off data rates from currently available voice applications on the network. They will undoubtedly improve over time using a lot of techniques. There is a kind of unpredictable element to packet arrival that distorts voice and they may be using more than necessary to try to compensate. Whatever it is, someone will change it shortly. The point was that the scale of extant voice traffic is huge. Voice really isn't that bandwidth intensive compared to video and other things, but it does take some, and there is a huge number of calls. Moving a small portion of it from the current voice network to the IP network sounds like a great idea, but winds up having largish impacts on the network. I showed my work, the purpose being to allow you to plug in whatever values you consider appropriate given the technology of the moment. It essentially comes out the same.

The spam issue is not an easy one. ISPs are quite legitimately frustrated and annoyed over the deluge of this trash. Unfortunately, the easy and emotionally gratifying answers are rarely the good fix. Spam is annoying. Blackholing is essentially death on the Internet and should be subject to similar capital punishment in kind.

Jack Rickard

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SUBJECT: SEVERAL

Let me start by saying "ditto" what all the other readers tend to write about *Boardwatch*. Being a reader from the BBS days, I've seen a lot!

SPam SPam, everywhere SPam. Everyone should be thanking their Start Buttons that it is only in their e-mail box, and NOT on their plate! :D

Seriously, and I hope I am not repeating the dunderings of the millions of other whino's, er, whiners, but there are some serious issues presented from both sides of the table.

1) People DO want to advertise whatever they have to "SELL", whether it is a reputable company or the kid down the street wanting to send chain letters that can make us all millionaires in one month.

2) Someone DOES get stuck with the bill somewhere down the line for all of that stuff that ends up on servers and in inboxes.

What is the real issue, though? Jon Doe wants to sell his stuff, but Jane may or may not appreciate receiving the e-mail. Janes ISP may or may not care that every one of it's clients just got a 1k piece of e-mail.

The manner in which this advertisement is sent is ghastly, to say the least. By a CD with 45 gazillion e-mail addresses on it and click away.

I can't offer a suggestion of what to do or a solution for either side, except that everyone needs to stop for just a moment and look at the issue from both sides of the table. If it were a perfect world, everyone would do this, and then we would have people sitting down at the table, discussing the issue, and coming up with a resolution that would benefit everyone.

Heck, everyone could be a winner. Look at Juno E-mail for instance. They offer free e-mail that is supported by targeted advertising. If this idea was utilized at the ISP level everywhere, maybe there would be a way to allow targeted advertising.

Check it out. New user signs up for his service. He fills out his registration information, just like you do for everything else in the world today. The information doesn't get passed the ISP level. Every piece of e-mail I have looked at has a header that tells the e-mail client what the e-mail is, how it was made, etc. And additional line of coding (have to be standardized though!) could allow for targeted advertising. If an account wasn't tagged for the incoming advertisement e-mail, it would immediately be deleted off of the server, saving server space. In return the ISP would receive a payment (like Bob Morse's idea suggested).

But really Jack.... What we have to do is stop crying about the issues, stop trying to be spam police, and look at the REAL issues from both sides of the InBox, and come up with an idea that really works. TV didn't have ads in the beginning. Cable didn't have ads in the beginning. Newspapers didn't have ads in the beginning. I can go on and on, but eventually every medium has to capitalize on every bit it has to be successful.

Heck, *Boardwatch* didn't always have ads. But look at the ads on the pages

within *Boardwatch*. They are targeted, and I personally don't mind looking at them. I get my content that I look for in the magazine and sometimes get a bit more when I find one of your PAYING advertisers service useful to me, or someone I know.

Nuff said. Thanks for your five minutes of time reading this. I feel better now that I got that off of my chest!

Michael Faith
mfaith@bbtel.com

P.S. Jack, please pass it on to the subscription guys NOT to kill me when my subscription expires. It was not my desire, but my wonderful daughter ended up in the PICU at the children's hospital recently, and we know what 12 weeks of ICU bills can end up being (actually, I don't know yet, you'd be surprised how many specialists there are for each bodily function you've got! :), so I'll have to be content with the online version and the copies that I thumb through at the newsstand!

God Bless!

Michael:

The concept that there is a place for advertising via e-mail has some bare initial merit. I used to talk about treasure and trash being in the eye of the beholder and it might have been for a brief moment. But the bitter truth is that the spammers have so gruesomely soiled our network that no self-respecting marketer would use it at all as a legitimate advertising medium—at least beyond their own closed customer list. In practice, I DON'T get e-mail from Land's End, or from Hummer add-on parts dealers, or from anything I would be remotely interested in. I would take it further that I don't actually get spam even from legitimate companies offering things I'm NOT interested in. The only spam I get is from truly whacky rip-off artists and ne'er do wells offering pyramid schemes, netsex, or the tools so I too can spam. It is a total wasteland. And it comes in such huge numbers it almost makes e-mail unusable. Is anybody actually ordering this stuff?

I'm sympathetic to the role of the network as a great leveler allowing the smallest entrepreneur to work on an even field against DuPont, 3M, and Sears. But in practice, it just draws cranks and wackos who go beyond the quick buck artist level to just slimy. I really am not sympathetic to anyone I can see that is currently spamming. My concern was

DROWNING IN JUNK E-MAIL?



Tired of trying to stay afloat in a sea of unsolicited e-mail?
Your ship has finally come in.

MAIL FILTER

• BSDI's **MailFilter** stops 95% of your junk e-mail. It's the first and only site-wide anti-spam appliance and is installed near your mail server. Spam is detected before it hits your mail system, preserving your network bandwidth, system resources, and user patience. Better yet, installation takes just 15 minutes and protects your domain with no changes to your mail server and its clients. • **MailFilter** uses a revolutionary new "intelligent recognition technology" to spot spammer's signatures and detect 90-95% of spam at your site—for more effective than traditional address-based techniques. To ensure long-term protection from oncoming waves of junk e-mail, BSDI's real-time, continuous update service supplies new rules to your site as soon as they are available from BSDI. Your unwanted junk e-mail eliminated now and into the future. • *Before you go down for the third time, give us a call at 1-800-380-2737 or find us at: 5575 Tech Center Drive, Suite 110 • Colorado Springs, CO 80919* • phone: 719-593-9445 • fax: 719-598-4238 • info@bsdi.com • www.bsdi.com

BSDI[™]
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with the reaction ISPs are taking to SPAM, and the potentially bad effects it will have on them ultimately.

As to solutions, I may have one. I'm still working on it. Basically it takes your concept of free e-mail and turns it on its ear. How about we all PAY for e-mail?

Yes, let's say that to send a piece of e-mail, we'll pay 32 cents – the same as a first class letter via street mail. But instead of giving it all to the post office, let's do something creative with it. Let's give a nickel to the ISP at the originating end, and a nickel to the ISP at the receiving end. Let's set aside 7 cents to run the clearinghouse and infrastructure needed to keep track of the money. And let's give 15 cents to the RECIPIENT.

Sounds mad doesn't it. But wait a minute. Most of us using e-mail legitimately, both send and receive e-mail. If I get 15 cents to read a message, and I spend 32 cents to write one, on balance e-mail costs me 17 cents. But if I want to spray a million messages out on the Internet to advertise my product, there is no offset on return messages, aside from a handful of flames, and I pay the full 32 cents. This sets up a cost differential between abusive use of the e-mail system to market stuff, and legitimate personal e-mail use. Mail is cheap for private use (17 cents) and somewhat dearer for mass marketing purposes (32 cents.).

I think you'll find end users reaction to spam somewhat different as well. If you send me junk, but I get 15 cents to hit the next key, which I'm hitting now for free, send it on. I'll take your money. Dufus.

Further, let's say there WAS a legitimate marketer wanting to reach me, but didn't want the hit of being associated with SPAM. Since everyone they send their sales pitch to gets fifteen cents for doing almost nothing, it rather puts it in a different perspective doesn't it. It's almost like getting flowers, instead of inconvenience.

I would propose this pay mail scheme be entirely voluntary and parallel to the current e-mail service. Nobody should HAVE to do anything. If you want to live in the swamp with the free e-mail service, go girlfriend. If you want safe harbor from SPAM, join pay mail and if anyone has anything sufficiently important to send you, they should care enough to cough 32 cents. If they care enough to cough 32 cents, I'll read it.

Once in place, the system spews some side benefits. It essentially fills the micropayments economic system that

people have been wanting for years. You can sell your recipe's, poems, nuclear weapons plans, whatever for 15 cents to anyone that will pay 32 cents. The process could be reversed for mailing lists, so that you pay the sender 32/15 cents for each message they send – a kind of cheapo subscription service. And if they send too many stupid ones, I can resign and join some other list elsewhere. All these guys slaving thanklessly maintaining these lists get a few bucks, and I suddenly find I'm getting a lot better quality messages from the list, which is now moderated as it turns out. You could even extend this to the point of opting out of messages with a certain subject line – turning off entire subjects and discussions from a mailing list you otherwise did want to stay on.

There are some server, distribution, and authentication issues, some of which are probably non-trivial but all doable. All of the numbers can be moved around. The basic point is to set up some ECONOMIC motivators to quell spam, not simply announce (via e-mail usually) that you don't like it and wish they would stop. Or wish some legislature will magically become wise in netlore and save you by criminalizing it, or by scapegoating ISPs everywhere and holding them severally and as a group responsible for everyone with a dialup account and a keyboard.

Free e-mail sets up a "free" marketing channel. With that kind of incentive, I can send 45 million e-mail messages hoping to get THREE orders at \$12.95 each, and I'm in tall clover here. Never mind that 44,999,997 people were inconvenienced – I've got my thirty-nine bucks and I like this Internet stuff real well. If it costs me \$12 million bucks to send those 45 million messages, \$39 doesn't cut it and I'm outta here.

That's the heart of the problem. And until you are willing to attack this beast it at its heart, whining and whacking away at its fingers is going to have limited impact.

Jack Rickard

◆◆◆

ONLINE SOFTWARE

Jack,

I love Boardwatch, yadda yadda yadda. I am a cash suscriber, bla bla bla.

That out of the way let me get to the point of this letter. I was a great believer in software purchases over the net. I

would download shareware and try it out and if I liked it I would send a check. Then, as a Netscape registered subscriber, I down loaded Netscape Communicator. This worked well and I was happy. I then went to real.com and downloaded and PAID ALMOST SIXTY BUCKS for Realplayer 5.0, an ADMITTED BETA PROGRAM.

Now Netscape locks the computer when I try to access smart update (right after Java starting) and Realplayer produces a friendly GPF (I run WFW 3.11) whether I am online or offline. The bottom line is that I refuse to purchase software over the net. I want the oversized box so I can shove it up the vendor's floppy drive when it doesn't work. Vendors tell you to contact Bill Gates, your ISP and the Pope to resolve the problem. For \$80 and \$57.98 shouldn't the vendors make sure that the stuff works?

Yours,

Frank J.Santeramo
fsantera@ix.netcom.com

They should Frank, but they don't. I've been on both sides of this actually. And I can tell you I can't recall at this point ever having or seeing a software program in over 20 years that actually wasn't broken in at least two places in the final version after years of fixes – and I'm including the stuff I wrote and sold in the mix. I guess that's why they call it soft. It's frustrating but true.

The speed the industry is moving in now precludes even an attempt at operational code. If it more or less hobbles along drunkenly, sorta/kinda does something you approve of your computer doing, and only wrecks the other six programs closest to it on the disk surface, I guess it's the "good" stuff. And there is precious little of that available. Most of the drek will actually cause damage to the system you've spent so much time setting up and getting operating. I basically install it at will, and after about eight months replace the computer. You don't really have to do that. You can wipe the drive clean and start all over on the same computer. But the gradual accumulation of detritus has its own computational entropy.

Your letter depresses me Frank. And my response is even darker and more depressing. Maybe when the clock rolls over on New Year's Eve 2000 it will all get better. It's Friday and I'm for a gin.... See ya.

Jack Rickard

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ONE MAN'S SPAM

Jack,

For years, I swore to myself that when I finally wrote to *Boardwatch*, I wouldn't begin with the semi-obligatory praises. I find that I must break that vow.

Jack Rickard is right about spam; it is a content issue. Full stop. Here is an example of why this is true.

About the time that eSoft's IPAD left beta and went into full release, eSoft started an IPAD mailing list and, without consulting users, included everyone who had purchased an IPAD on this mailing list. It took me 2 or 3 days to get my name removed from the list. Before I did, however, I received several hundred unwanted messages.

There are differences between what eSoft did and what folks like Sanford Wallace do: eSoft was offering a free service to its customers rather than trying to sell something; eSoft sent to hundreds (thousands?) as opposed to millions; and, perhaps most importantly, it was quite easy to get removed from eSoft's list. (BTW, no one should assume that I am offering these differences as a basis for a definition of spam content. I'm not.)

But, let's look at the similarities. This e-mail was unsolicited and sent out in bulk. This e-mail slowed my work day down, interfered with what I was trying to get accomplished and buried my "real" e-mail in so much garbage. There was no practical difference between these IPAD e-mails and the ponzi solicitations we are all unfortunately inundated with.

Now, here's the real question. Was it spam? Nah. Annoying? Intrusive? Absolutely. But not spam. It was the benevolent, if misguided, attempt of a well-respected company to help me do my job. On the other hand, a few very vocal people on the list felt quite strongly that what eSoft had done was a sin against nature; for them, it was most definitely spam. There's your eye of the beholder thing again. But that's quite the point. Spam is a content issue.

I am mercifully out of the ISP business now, but I do feel bad for all ISPs who, thanks to that vocal minority (hopefully, it is a minority) sadly lacking in foresight, will have to be responsible for the content presented by their customers. This week, it's AGIS and spam. A question to members of the that minority. What unpopular idea will be the issue

next week? And who will be the ISP "harboring" purveyors of that idea. It just might be you. And this time, it won't be other ISPs coming after on you. It'll be the government. And, let's face it. They're more powerful than you are.

Steven Berkowitz

Steve:

Thanks for the letter. It's a problem. And I have actually been directing a few neurons towards a positive solution. This activity always causes shooting pains down my back and flashes of very unpleasant light behind my eyes, but I have been moved to try. It's coming slowly. Help me. Let me ask you this. If you paid 32 cents to SEND your real e-mail, and the recipient got 15 cents of it, and both ISPs each got a nickel, and you could keep this REAL e-mail separate from the "other" e-mail, would it be worth it to avoid the mess? And if eSoft thought enough of you to spend 32 cents sending you the message, and you actually got 15 cents to read it, would it THEN be spam?

Jack Rickard

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MORE INFO ON THE US TELECOM ACT 1996

Dear Jack,

I've been following the *Boardwatch* Magazine for three months now, and I would like to apply some of what I read (I already do, in terms of technology) to my reality here. I represent an ISP in Brazil. This country is undergoing major changes in the telecommunications industry, with all the state-owned companies being sold to private investors, and the breaking of a multidecade-long monopoly.

A lot of people are confused down here, though, as to where exactly is the government leading this process. Even the government itself! Most experts in the area believe that the opening will be complete or, in other words, US-style freedom to act. Some, however, believe not. I would like to get some more information on the Telecom Act 1996, in order to have ideas on what to suggest (or to aim for) the government down here. I would like to see ISPs becoming CLECs, just as they are in the US, but I need to know what rights do they have in the US, to suggest them down here.

Best regards,
Nelson C. L. Pedrozo
Domain Internet - Rio de Janeiro - Brazil
nelson@domain.com.br

Nelson:

Boardwatch is meant as a humorous magazine for your entertainment. Under no conditions should you attempt to actually do any of this, particularly at home. Attempting to apply it to reality is specifically ill advised.

That said, a lot of people are confused up here, and particularly on the role of government and regulation and how to have a competitive communications infrastructure. I've been following it avidly since age four, to the admirable end of knowing just enough about it to be wildly more confused than the less learned and knowledgeable.

In response to your request, <http://www.fcc.gov> has more than you ever wanted to know, including the full text of the Act if I'm not mistaken.

Jack Rickard

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CABLE MODEMS

There's something I've been worrying about for a while now. My cable company is now installing a fiber optics system in my area. This is supposed to give me more channels, but who cares when you have a computer and the Internet right? Well, the thing that's bothering me is this. Is this going to make cable modems impossible, or is it a sign that I'm getting a cable modem service soon? If so, I can't wait, but if it screws up my cable modem dreams then that just sucks. I'd rather just view my regular old 40 channels. One other thing, if this does mean cable modem mayhem, does this mean more bandwidth? Thanks, a response would be appreciated. I've been craving for cable throughput since I heard about cable modems from boot. I doubt I'll ever get it because I live near Knoxville, TN and it's always the last place to get technological advancements. You wouldn't happen to know if there's a directory that tells where this service is coming to and already is would you? Again thanks for your time.

Duane Schmidt
lordddane@icx.net

I don't Duane. But there is hope. No, the "more channels" won't crowd data off of your cable lines. In fact, what we're see-

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ing is that cable delivery of Internet access tends to go with areas with fiber connectivity for the delivery of cable television. More channels coming usually implies an upgrade of RG-58 coax to fiber, and a better system for Internet access.

Cable is on the horizon, has been on the horizon for several years, and for the vast majority of us will remain on the horizon for some years to come I fear. Bottom line, don't hold your breath. The way these things usually shake out is, that by the time cable is an option, xDSL, wireless, and several other options will also be available..

After playing with the 56K modems, I find I like them. Go get one. It could be real dusty by the time cable happens.

Jack Rickard



THE MASS E-MAILER MAKE A PROPOSAL

Hello, I must congratulate everyone at Boardwatch on a great job done, and would like to note that the new Boardwatch site looks MUCH better than the old one. Great job.

Also, I was wondering if we might have an ISPcon in New Orleans sometime soon. It would be great to go, but it's hard for me to travel so far being 16.

I have been providing web hosting for a few years now and have run across the mass e-mailers more than my fair share of times, as I believe most Boardwatch readers have. I have taken up searching through headers of those who seem to send mail to all of the users on certain domains or that send repeatedly and contact their ISP while they are sending the e-mail. I have had a good number of people stopped this way. Most ISPs I contact are happy to help out and are glad to get the users off their systems that tie up their servers and cause problems.

I recently though, received an e-mail that had forged headers from my domain, a local ISP, and a few national ISPs. It was eventually tracked (through the phone number on the message) and I contacted his ISP. I received a proposal from the spammer group he is with that I thought Boardwatch readers might enjoy. It's rather funny, and quite frankly, pathetic. I like the penny an e-mail proposal myself. Someone that has the time could write some very good soft-

ware and automate this task and it would effectively curb the barrage of junk that flows through the t-1's and onto our networks every day.

I would also like to get your opinion on who to contact about spammers that use servers that do not belong to them to send mail. I have had a server shut down because of this before. I contacted the local Sheriff's department but they were (to put it nicely) less than helpful. One problem with this is that they attacked a major server on the network stopping mail in and out for hundreds of users.

Thank you for the great magazine once again, I cannot tell you how many times I have had a question and found the answer between those pages. Great job. Are there any plans to release a CD version of Boardwatch like Linux Journal does? If this already exists, could you please send me the info on ordering it.

The best to all in 1998— I thank you for your time..

Mark Lyon

lyon@itwp.com

it! WWWebpage Creation and Hosting

http://www.itwp.com

mailto:sales@itwp.com

Thanks Mark. I don't advocate whipping the ISP to get to the user myself. We're actually seeing users cut off from the Internet on accusation, SPAMMERS spoofing addresses, and other assorted complicating ills. What's been tried isn't working so well. The only thing that has worked has been lawsuits in limited instances, an alternative that most users and ISPs have avoided because of the costs. At this point, I advocate abandoning free e-mail to the spammers, and setting up a pay e-mail service for real people.

Jack Rickard



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MULTITECH LAUNCHES TWO NEW SOHO MODEMS, PLUS A NEW V.90 MODEM



MultiTech has introduced two new modules for the small/home office. They are the MultiModemZBA external data and fax modem and the MultiModemZBAV voice mail and data/fax modem. They can be connected to systems of nearly any platform including MacOS, Unix, PLC, RAS, and POS. If multiple modems are necessary, the MultiModems can be rack mounted.

The MultiModemZBA family supports Group 3 faxing via Class 1 and Class 2 commands, async operation over dial-up or 2-wire analog leased lines, and 11-bit configurations. Class 2 fax is required for compatibility with most major fax applications and it is not supported by most K56flex modems.

MultiTech said that it will also begin to offer modems that run either the K56flex protocol or the new V.90 protocol. Users will be able to decide which protocol to use when they install their modem software. MultiTech will make the latest revs of V.90 for its modems freely available on the web site.

MultiModemZBA has an estimated street price of \$159 for the MultiModemZBAV will sell for about \$179. MultiTech Systems can be reached by phone at (800)328-9717 or (612)785-3500, by fax at (612)785-9874, or on the Web at www.multitech.com.

AG COMMUNICATIONS EXTENDS MARKETING AGREEMENTS

Astronet Corporation, makers of microcellular products, will develop 1.9 GHz and 800 MHz base stations for AG Communications (www.agcs.com) in-building wireless telephone systems. Under the agreement, Astronet will build base stations and supply its IS-136 control and air interference software. The base stations and the software will be used in AG's Roameo PocketPBX wireless telephone systems.

The system will conform to AT&T's Wireless Office Service. The two companies currently have an agreement by which AG Communications markets Astronet's Amps service and Astronet markets AG's OffiCell product.

AG Communications also announced a similar partnership with Ball Telecommunications. A newly formed division of Ball, the Ball Wireless Communications Group, will provide its Parity in-building antennas for the Roameo system.

"A top-quality antenna system is crucial to the successful operation of our Roameo wireless office telephone systems," Julian Thomson, general manager of AG Communication Systems' wireless product line, said in a statement. "We are very impressed with Ball's technical savvy on this project and we look forward to working with them on upcoming products."

NATIONAL AND REGIONAL ISPS PILE ON AFTER AOL ANNOUNCES PRICE HIKES

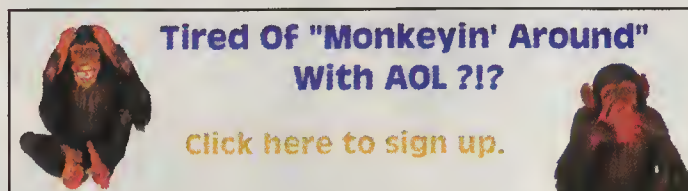
In response to America Online's announcement that it would be raising monthly fees from \$19.95 to \$21.95, at least one national ISP has announced that it will be doing no such thing for at least two years.

Worldkey.net, Inc., based in Van Nuys, California, will freeze its prices, which start at \$19.95 per month for a single user dial-up account, for anyone who signed up on or before March 31, 1998.

"We established this company with affordability of Internet access in mind," said Worldkey.net CEO John Stafford II, "and we believe that with our structuring, we can make this offer to the public."


Worldkey.net has access to an OC-12 network for its points of presence. The ISP offers x2 56 Kbps access in over 3,600 communities in the United States. Potential customers can sign up online at www.worldkey.net or by calling (818) 776-2930.

Erol's Internet (www.erols.net), a large regional ISP serving the East Coast from Washington, DC to Boston, teamed up with content provider Planet Direct (www.planetdirect.com) in a month-long advertising campaign to lure subscribers away from America Online. The theme of the television ad: "Where would you be without America Online?"



In published reports and statements, representatives from Erols noted that each time America Online makes a drastic change in its service, independent ISPs of all sizes benefit from a windfall of new customers. Last year, America Online customers faced an unacceptable amount of busy signals after the company went to a \$19.95, unlimited hour package.

Erols offers unlimited access for \$19.95 per month and gives significant discounts to customers who pay for their service years in advance.



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US Internet (www.usinternet.com), a Minnesota ISP secured a toll-free vanity number, 888-Leave-AOL, to entice users to join its service.

Finally, EarthLink Network (<http://cgi.earthlink.net/quitaol/>) hoped to capitalize on AOL customer rage by launching a "get out of AOL for free" program. EarthLink will be holding its \$19.95 price for unlimited access indefinitely. It will also waive the setup fee for any new customer switching from America Online to EarthLink. Adding insult to injury, EarthLink will also send out change of address notices to the friends and colleagues of former AOL users who make the switch.

SPRINT BUYS A PIECE OF EARTHLINK



Speaking of EarthLink, Sprint recently bought a 30 percent stake in the national ISP. This deal signals Sprint's exit from the consumer dial-up market as its Internet Passport business will be combined with EarthLink's end-user services. Control and management of the dial-up business will become EarthLink's responsibility.

EarthLink gained 130,000 subscribers as a result of the deal, bringing its total roster to over 600,000 subscribers.

Sprint agreed to buy 4.1 million EarthLink convertible preferred shares directly from the company. The long-distance phone company also bought another 1,250,000 common shares on the open market for \$45 per share. When the deal was announced, EarthLink stock increased by over 20 percent, closing at \$46.75.

QUIZ SOFTWARE PORTED TO JAVA

Quiz Studio (www.quizstudio.com), a software package designed to allow novice programmers create interactive surveys, questionnaires, and quizzes is now available as a Java application. The software runs on any platform that supports Java 1.1.2, including network computers and WebTV. It also runs on anything that supports any SQL-type database, in addition to web browsers.

It allows designers to use jpeg and gif images, .wav and .au sounds, avi and mpeg videos, and PowerPoint presentations. "Most questionnaires are administered by mail or over the phone, and mostly by paper and pen, which can become extremely time consuming and expensive if done on a large scale," said Terry Levy, founder and chief executive officer of Elti, Quiz Studio's parent company. "Using the Internet instead dramatically reduces the cost of consolidating results, and it also allows our customers to reach millions of respondents quickly, no matter where they are."

Quiz Studio's price is determined by the size of the survey to be performed. It ranges from \$2,000 to \$20,000.



DANICK SYSTEMS UPGRADES THE PITCHFORK SMALL OFFICE ROUTER


The Pitchfork (www.pitchfork.net) office router has been upgraded to include an unlimited e-mail boxes and faxing from the desktop. These new features are part of the Pitchfork Phase II Internet Distributor.

"Installation is easy: plug a phone line into the built-in modem, plug the network connection into the built-in network interface, and plug in the power cord," said David Nathans, president of Danick Systems, LLC.

The Pitchfork connects users on any type of network to the Internet through a built-in modem or ISDN connection. Each user can have one, or several e-mail addresses. Users can even fax documents through the Pitchfork using any e-mail program.

The Pitchfork connects to the LAN through an RJ-45 for 10BaseT or 100BaseT, or through a BNC connection for 10Base2. The modem line interface is a standard RJ11 connector and the ISDN terminal adapter uses a digital serial interface. The Pitchfork supports all major Internet protocols, including FTP, HTTP/CERN (Port 80), Telnet/NNTP, SSL/DNS, POP 3/SMTP/IMAP4, America Online(TCP/IP), RealAudio, and many more.

It has a list price of **\$2,900** and can be ordered directly from the company's web site at www.pitchfork.net, or by phone or fax at (617) 524-4841 and (617) 983-0068 respectively.



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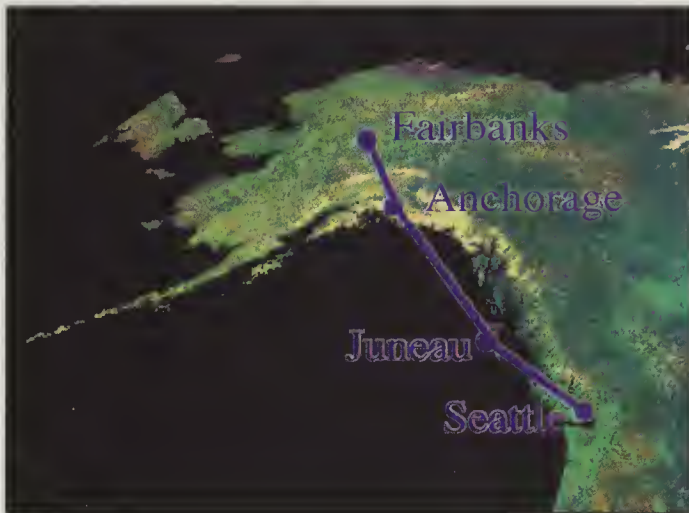
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COMPANY RAISES MONEY TO BUILD ALASKAN TELECOM PIPELINE



General Communication, Inc. announced that it raised \$125 million to build a fiber optic network connecting parts of Alaska to Seattle, Washington. Wholly owned by GCI, the Alaska United Fiber System (AUFS) will connect Fairbanks, Anchorage and Juneau to Seattle. The 2,300 mile fiber system is on schedule and is expected to be completed by December 1998. Tyco Submarine Systems is constructing the undersea portion of the system.

GCI currently serves 125,000 customers in Alaska. The company provides local and long-distance telephone, cable television, and data communication services.

LUCENT ANNOUNCES 3COM INTEROPERABILITY

Shortly after an ITU committee agreed to a draft the V.90 standard for high-speed PCM (pulse code modulation) modems, Lucent announced its modem chips are now interoperable with 3Com's high-speed analog modems.

Furthermore, the chips will support both K56flex and V.90. Regardless of ISP or connection, users will be assured the highest possible connect speed. When calling an ISP, each Lucent-based modem will automatically choose the modulation scheme that offers the highest connection speed.

"ISPs using Lucent's remote access equipment will now be able to support 3Com's V.90 modems," said Steve Willens, president of Lucent's Remote Access Business Unit. "Lucent's remote access equipment is software upgradable to the V.90 standard and will continue to support K56flex for all legacy modems in the field."

Lucent chip sets are embedded in modems for manufacturers like Compaq Computer, Hewlett-Packard, IBM, NEC, and Sony. Lucent recently bought Livingston Enterprises, makers of remote access equipment for bulletin boards and Internet services. The company was absorbed and renamed the Lucent Remote Access Business Unit.

BELL SOUTH ADDS 30,000 PORTS IN 44 POPS

BellSouth.net has struck a deal with Cisco to deploy AS5200 and AS5300 universal access servers in 44 of its POPs. The

company adds 30,000 dial-up ports in the nine states it serves in the Southeastern United States. In 16 months of operations, BellSouth.net has acquired over 200,000 subscribers. By implementing the Cisco equipment, BellSouth.net is able to focus its efforts on 56 Kbps modem deployment and ISDN.

The AS5200 delivers hybrid, asynchronous serial and ISDN line services. The Cisco AS5300 supports near line-speed performance for up to 120 concurrent analog modem calls and ISDN B channels over a single, dial-in telephone number. It is a DSP-based product that can be easily upgraded to meet new standards and offer new services.

BERKELEY SOFTWARE DESIGN GOES JAVA

Berkeley Software Design, Inc. (www.bsdi.com) will be using Java in upcoming releases of its Internet Server and eBSD software packages. BSDI's adoption of Java allows developers to easily create third-party applications. Java's "write once, run anywhere" promise gives software developers the ability to easily port their applications to other platforms.

According to a BSDI statement, "With this license, BSDI has access to JavaSoft's complete application execution environment, including the Java Virtual Machine and all required class libraries."

IPASS BUILDS A MAC CLIENT

After announcing that over 250 ISPs have signed up for its service, iPass (www.ipass.com) announced a Macintosh version of its roaming software. The Dial Wizard, which has been available for Windows, is a client package that displays the dial-up numbers for all of iPass's POPs.

iPass provides a worldwide roaming service for Internet service providers. Currently, the company has access to over 2,000 points of presence in 150 countries.

IBM OLYMPIC WEB SITE REGISTERS MILLIONS OF HITS

The IBM 1998 Winter Olympics official web site (www.nagano.olympic.org) registered nearly 650 million hits from around the world from February 7 - 22, the company announced. The number of hits from the winter games are nearly 3.5 times the 187 million hits registered during the 1996 summer games in Atlanta, Georgia.

During two, simultaneous, high profile events, the gold medal women's figure skating, and the semi-final men's hockey game between Russia and Finland, IBM recorded 103,429 hits per minute. On February 13, IBM recorded 56.8 million hits, the highest one-day total of hits during the games.

IBM claims the total number of hits recorded during the games, the hits per minute registered during the figure skating and the ice hockey game, and the highest one-day number of hits set new world records.

Overall, IBM said they processed more than 4.5 terabytes of data from Internet users around the world, and from the 82,000 accredited persons on-site. According to IBM, the sport which Internet users requested the most information about was Curling.

THERE ARE ENOUGH COMPLEXITIES IN LIFE. CONNECTING TO THE INTERNET SHOULDN'T BE ONE OF THEM.

Creating an Internet presence can be a frustrating experience, even for the expert. Beyond the web server there are routers to make the connections, FTP to move the files, and e-mail servers to give your mail a home. And don't forget the Domain Name Server that's required so the world can know your name. Even after you gather all the pieces, you still have to integrate them. And the costs, in time and money, can be staggering. But now there is an easier way.

THE INTERNET PRESENCE IN A BOX

The Internet Protocol Adapter (IPAD) is the only product that fully integrates a router, terminal server, and core Internet services (e-mail, DNS, unlimited WWW and FTP servers) into a single device. With all the necessary internal and external connections, Domain Name Service, and other required functions, the IPAD includes everything you need to easily establish a complete Internet presence. In fact, it's so complete, you can add remote access by simply plugging in modems and dialing in with any Internet compatible computer.

BUILT WITH PERFORMANCE AND DURABILITY IN MIND

The IPAD's capability is housed in a rack-mount chassis of battle-ready construction. Its custom software, optimized for the Pentium processor, yields an unprecedented combination of performance and durability that you can never get from a general purpose operating system. The IPAD may be easy to use, but it's no toy.



	IPAD	Windows NT
Computer Hardware for Server CPU	Comparable performance	166 Mhz Pentium, 2 GiB SCSI Disk, Ethernet, Coching Controller 96 MB RAM,
	\$7465	\$3500
Router Software	Included	\$1800
Configuration Time	Pre-configured	1-3 hrs
Configuration Cost	—	\$70 Avg
Sub Total	—	\$1870
System Software O/S	Included	\$895
Configuration Time	Pre-configured	5-30 hrs
Configuration Cost	—	\$615 Avg
Sub Total	—	\$1510
Web Server	Included	Included
Configuration Time	Pre-configured	3-25 hrs
Configuration Cost	—	\$490 Avg
Sub Total	—	\$490
FTP Server	Included	Included
Configuration Time	Pre-configured	1-2 hrs
Configuration Cost	—	\$50 Avg
Sub Total	—	\$50
DNS Server	Included	\$495
Configuration Time	Pre-configured	5-80 hrs
Configuration Cost	—	\$1600 Avg
Sub Total	—	\$2095
E-Mail Server	Included	\$580
Configuration Time	Pre-configured	10-100 hrs
Configuration Cost	—	\$1900 Avg
Sub Total	—	\$2480
Support Costs Per Year	\$795	\$2100
	Includes Hardware and Software Protection	No Hardware or Software Protection
Number of Vendors	1	5
Total Cost	\$8260	\$13,600
Time from receipt to fully operational site	2 Days	120 Days

PLUG 'N PLAY AND WALK AWAY

Many products claim to be easy to use, but the proof is in the time you spend getting it up and running. With other products you have to *learn everything* before you can *do anything*, and with the Internet there's a lot to learn. Only the IPAD allows you to get started immediately, and learn as you go. Information Week said of the IPAD "from box to working system in two hours even with mistakes."

And this ease of use doesn't stop there. With an IPAD even those without formal Internet training can confidently grow and maintain their own network.

GO WITH A WINNER!

InfoWorld Magazine said "The IPAD represents an elegant solution when you need to easily build an Internet or intranet presence. Considering the time it saves you, the price represents a good value." In 1995 John C. Dvorak gave the IPAD his PC Telecommunications Excellence Award because he recognized the IPAD advantage.

DON'T WASTE ANY MORE OF YOUR TIME!

You want your Internet Presence up and running quickly without a long learning curve or sacrificing flexibility and power. Now you can have it! The IPAD is the *only* TCP/IP appliance that lets you *start immediately* and grow your site smoothly without forcing you to become an Internet expert (or hire one).

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Through the IBM Fanmail Site, where Internet users could send e-mail messages to their favorite athletes, IBM processed more than 250,000 messages, and supported individual home pages created by nearly 1,600 athletes. IBM provided 30 Aptiva computers with e-mail and Internet access in the Athlete's Village, so the athletes could read, respond to, and send their own e-mail messages.

The Info '98 intranet service, which published Olympic results, news, and e-mail for the Olympic community recorded over six million transactions.

To support the massive Internet interest in the Olympics, IBM constructed a sophisticated, transatlantic network. In building the network, IBM used only generally available products. John Chiavelli, IBM's Manager of Olympic Internet Systems, said that IBM built four separate, physical complexes, three in the U.S., and one in Japan, to handle the Internet traffic. All of the complexes were mirrored sites.

Each complex housed IBM SP Frames. In total, IBM used 13 frames. Each frame supported 143 IBM RS/6000 servers. The nodes were used to access the web pages. IBM used this system to spread out the web page requests, so one location would not be overwhelmed. According to John Chiavelli, IBM did not record one minute of outage.

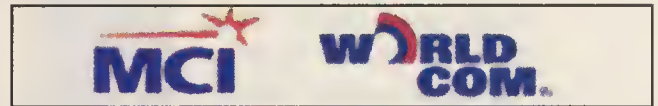
Each complex was joined by multiple T-3 (45 Mbps) connections, and each frame within a complex was joined by fast Ethernet connections. IBM also had dedicated, transcontinental bandwidth between Tokyo, Japan, and the U.S.

To lessen the load on the servers, IBM used a memory cache to store the 33,000 web pages Internet users could access. Web page requests were fulfilled with cache pages. When new results became available, IBM only had to update the pages in the cache.

The software IBM used to run its Olympic sites included Lotus' Domino Go Webserver, Sendmail, DB2 Universal

Database, and Net.Data for Internet and intranet access. IBM said the system was supported on-site by over 800 IBM specialists, drawn from 17 different countries.

WORLD.COM, MCI AND, SPAIN'S LARGEST TELCO TO CREATE NEW BUSINESS VENTURES



WorldCom, MCI, and the Spanish telecommunications company Telefonica announced they have reached an agreement that will create new business alliances in Europe and Latin America. The agreement will allow Telefonica to take a minority equity interest in WorldCom's European businesses, and allow MCI to take a minority stake in Telefonica's International unit.

Telefonica (www.telefonica.es) will join WorldCom's European business network as a distributor. Telefonica will also have options to acquire a 10 percent stake in a new company that will be established to manage WorldCom's existing European operations, and a 46 percent share in WorldCom's existing Italian operations. Juan Villalonga, chairman and CEO of Telefonica, will join the MCI/WorldCom board of directors if the MCI/WorldCom merger is completed.



The agreement also builds upon the Pan American joint venture created by MCI and Telefonica in April 1997. Telefonica's International unit and MCI will operate the joint venture, called Telefonica-PanAmericana MCI (TPAM), in Latin America. TPAM is 51 percent owned by Telefonica, and 49 percent owned by MCI. TPAM plans to build an all-digital, fiber-optic network to link the major business centers throughout Latin America. The network will be designed to carry both data and voice traffic. By the year 2001, the companies expect the network to connect nearly a dozen Latin American business centers, with gateway connections to MCI, WorldCom (www.wcom.com), and Telefonica facilities in North America, Europe, and other parts of the world.

MCI (www.mci.com) will have the option to acquire a 10 percent stake in Telefonica's International unit (TISA). TISA is

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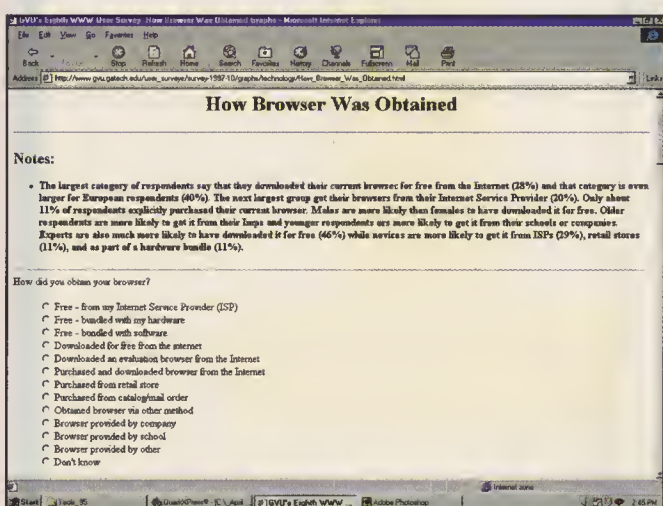
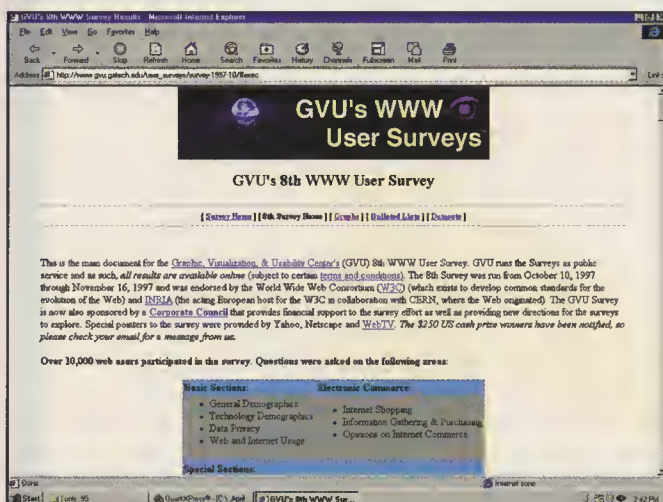
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the largest telecommunication provider in Latin America. MCI and Telefonica will also create a joint venture in the U.S. to provide products, promotions, marketing, and customer service to the U.S. Hispanic market. MCI will own 70 percent of the new company, and Telefonica 30 percent. Currently, the Hispanic telecom market represents eight percent of the total U.S. long distance market. However, the Hispanic market is the fastest-growing demographic segment, estimated at over 29 million people.

Telefonica claims to be among the top ten telecommunications companies in the world, and the largest provider of telco services to the Spanish speaking world. The company was privatized in 1997, and its annual revenues in 1997 were \$15.58 billion.

AVAILABILITY OF BROWSER BIGGEST FACTOR IN CHOICE



The results of an online survey suggest the number one factor used by Internet surfers in determining which browser to use is availability. Novice users surf the Internet with whichever browser is made available to them, through software included on new computers, popular software packages, or start-up kits of Internet service providers. After using a certain browser, novice users are then reluctant to switch browsers.

The Graphic, Visualization, & Usability Center (GVU) at the Georgia Institute of Technology conducted the survey from October 10, 1997, to November 16, 1997. The survey uses non-probabilistic sampling and surveyed over 10,000 web users. The GVU employs newsgroup announcements, web site banners, mailing lists, popular media announcements, and cash incentives to recruit web users to complete web-based questionnaires. The study is conducted every six months and is endorsed by the World Wide Web Consortium (W3C).

The survey found that 32 percent of respondents chose browser software because it was installed on their new computer, included in the start-up kits provided by their Internet service provider, or made available as part of a software package they purchased. The bundling of browser software was the single largest reason cited for use of a browser.

More than 70 percent of all respondents indicated they have not switched browsers in the past year, including over 80 percent of novices. People who considered themselves "expert users" were much more likely to switch; 33 percent of expert users had switched browsers at least once in the past year.

Other results of the survey are just as interesting. Respondents indicated the most important issue facing the Internet is privacy (30 percent), followed by censorship (24 percent) and navigation (17 percent).

The results of the survey can be found online at http://www.gvu.gatech.edu/user_surveys/survey1997-10/#exec.

MOCKINGBIRD INTRODUCES NUVO 100

Mockingbird Networks introduced the Nuvo 100 telephony switch, which is designed to transport public switched telephone network (PSTN) voice circuits over Internet protocol (IP) networks. The Nuvo switch allows carriers and service providers to bypass the traditional long-distance networks, while interfacing to local exchanges and providing telco-grade service, the company says. The Nuvo 100 is a four-processor UltraSPARC II-based, NEBS-compliant (Network Equipment Building Standard), fault-tolerant system.

Another innovation by Mockingbird of Cupertino, California, is a new class of Advanced Intelligent Network (AIN) SS7 provisioning that allows Nuvo switches to imitate standard PSTN voice switches while converting Pulse Coded Modulation (PCM) voice or fax circuits to IP packets. Interfacing to the AIN allows the switch to support the standard features of SS7, including instantaneous connections. It supports AIN features, such as call detail records, caller ID, call forwarding, and multi-point conferencing.

Designed with redundant hardware elements including MVIP switching, Nuvo switches can be installed in 19- to 24-inch racks. A switch supports 96 full-duplex voice channels, and can be expanded to support up to 10,000 channels by adding switches. The SS7 software and AIN hardware is only required in the primary switch, the company says, so the cost per port drops in large-scale POPs.

Nuvo switches incorporate digital signal processing (DSP) technology for real-time voice compression. PCM voice channels are compressed from 64 Kbps down to 4 to 6 Kbps then routed to 100BaseT Ethernet ports. The Nuvo 100 supports up to four T-1 interfaces, which provide a direct connection to SSP switching trunks. Pricing starts at \$50,000. Mockingbird Networks, a subsidiary of Opus Systems, is located at 10050 Bubba Road, Cupertino, CA 95014. Phone 408-342-1060; fax 408-342-1061. ♦

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Jim Thompson
is managing
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Western News
Service in
Los Angeles,
California.
He receives
mail at
jim.thompson
@wnsnews.com

TECHNOLOGY FRONT by Jim Thompson Western News Service

INFECTION! MY TRIP TO VIRUS HELL AND BACK

It can't happen to me." On the heels of these famous last words I embarked on a four-day journey that took me through a world of panic, worry and precious little sleep.

My tale of woe began a few weeks earlier when I noticed that my online system kept losing the command.com file. The file was still there, it just couldn't be found when exiting a program. "Strange," I thought but no panic bells rung. I also was unable to create any reliable backups on my DAT. The backup went fine but I got dozens of "data mismatch" errors when doing a verify on the files.

This went on for about a week. Finally, as a temporary fix, I put the system files and command.com on a floppy disk and booted the system from that disk. Everything worked fine for several days. When I found some extra time, I decided it was time to get to the root of the problem. Little did I know that I was about to embark on an undertaking that would have me tearing out the little hair I have left and crying for mercy. I had a virus and didn't yet know it. Worst, I had no idea of how devastating it was going to be.

The system in question runs a BBS which is accessed by several thousand news organizations around the world. It contains news stories and is an important source of information for the subscribers. This is an important, revenue producing system. I certainly didn't want any problems with this one.

After fiddling with the system for several hours, checking with my gurus and reading everything I could find on the subject, I still had no answer. It was clear, however, that something was definitely wrong with the file allocation table (FAT). I first ran a virus checker. The results were negative — no virus here, or so I was told. Next, I reloaded DOS from the original diskettes. This seemed to work fine, but after a few more hours of testing, the system was losing track of command.com again. It was all beginning to get pretty weird.

At this point, I was getting worried ... and scared. I rushed out and bought a new hard drive. I figured that if I formatted a new drive (thereby creating a new FAT), then put the old files on the new drive, everything would be fine. After doing this, I got the system back online. Everything seemed to work fine.

By now I had shot an entire day but was breathing a little easier. Around midnight I went to bed, confident

that I had solved the problem. All that remained was to attend to the tape backup. During all this time, I was continuing to try doing backups with the same results — data mismatch errors. I concluded that the tape drive was failing and would have to be repaired or replaced.

The next morning all seemed to be working fine — that is, until I took down the system. At this point everything began to unravel. When I tried to run Norton Utilities to check everything, the system froze. Suddenly, a lot of files were missing. The BBS would not load because some of the files it needed were gone. I felt that dull ache in the pit of my stomach and knew that I was in trouble.

There was no longer any doubt. I had a virus.

By now I had used all my DAT tapes in an effort to get a usable backup. What was I going to do? This system has been in operation for 11 years without interruption. There are files that can never be replaced. (Why me, Lord?)

I went back to my original disk, only to find that it had failed completely. I was unable to get it to boot or even be recognized. (What have I done to deserve this?)

After about an hour of beating my chest and wallowing in self-pity, I suddenly became very calm. If I were going to resolve this, I had better keep a cool head and start on a careful and methodical process of finding the trouble and repairing it. It was Friday and the weekend of the Super Bowl, so traffic on the system was light. I knew if I could get everything back online by Monday, there would be no serious consequences. The schedule was set, the clock ticking. If only my nerves hold up.

My first bit of luck came about because of my mania about keeping a working system. I have always made it a practice of copying all of the core system files to a PCMCIA hard drive that I keep with my portable computer. I update these files whenever I travel out of town. Since I do a lot of travel, the core files are updated regularly. Best of all, I only update the files that have a newer date. Also, no programs have ever been run on this disk. It is strictly there for storage. This meant that there was a better than average chance that the files on my portable were virus clean.

Up to this point, I had no experience with viruses. For 10 years, I scanned viruses every day. In all that time,

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I never found one. I was told by those who claim to be experts in these matters, that the chances of me ever getting a virus on this machine was almost impossible. Viruses, I was told are wrapped in programs and only trigger when the program is run. I might have a virus infected program uploaded, but as long as I did not run the program, the virus would not be triggered. Since I never ran any foreign programs on this machine, I was convinced that "it couldn't happen to me." Consequently, I stopped scanning for viruses months before.

Obviously, this thinking was flawed. I needed a new, and much more conservative, approach. Up to this point, I did not know what kind of a virus I had and what it was capable of doing. For all I knew, the virus had infected the CMOS and lord knows what other hardware areas of the machine. I decided to get out the plastic and buy a new machine. This was the only way to insure that I was starting with a clean, virus-free platform.

After getting the new machine, I began the slow process of reconstructing the original system. It was now about 2:00 AM and the beginning of the third day. I decided that I was not going to touch the hard drive with the infected files unless it was absolutely necessary. Unless there was a file on that disk that I could not possibly operate without, the drive was going to stay on the shelf.

The first step was to restore the core files from the PCMCIA card. Before doing this, I was determined to make a complete check for any virus. I ran my virus checking program — no virus found. Not being satisfied, I purchased a copy of McAfee VirusScan. It found two viruses — one called CAP and another called CASCADE. Both are fairly new and come wrapped in a Microsoft Word Macro file. This was apparently the source of the original virus. I had received a Word document that contained a macro that contained the virus. By opening the file, I had triggered the virus.

Not being satisfied, I decided to try another virus checking program. I ran Norton AntiVirus. It found a virus that the other two programs had missed. This one was called, the Macro Component Virus. By now I was really paranoid. I decided to try another program. This time I ran Thunderbyte AntiVirus. It reported a virus in the first virus checking program! After a moment of panic, I realized that this was probably a false reading. It likely found bits of the virus code in the checking program (it needs this to detect the virus) and just labeled it as a virus. I let it purge the virus just to be on the safe side.

Not being fully satisfied, I decided to investigate the virus and virus checking programs a bit more. I isolated the virus-laden file on a floppy disk. First I scanned it with McAfee VirusScan. It found the CAP virus. I then scanned the same file with Thunderbyte. It found a virus in the same file but identified it as the Wm/nPAD.A virus. Norton AntiVirus identified it as the Macro Component Virus. I cleaned it with McAfee, after which none of the other programs found any traces. When I cleaned it with Thunderbyte, the other two programs (McAfee and Norton) still found the virus. Cleaning with Norton also erased it — at least the other two programs reported no viruses afterwards.

I made a mental note never to trust any single virus program but always to run at least two of them.

At this point, I was satisfied that all the viruses were gone. Now began the task of recreating the system. After restoring the (now virus-free) core program files, I ran the virus checkers again. I then took my oldest backup tape and began the slow task of restoring the other files. I restored one directory at a time. After the restore I ran all of the virus checkers. I repeated this process until all of the directories and files had been restored. It took a long time, but the result was that I had 90 percent of the files back in place and verified virus-free.

To get the final 10 percent of the files, I went to the disk drive where I had found the original virus. I was careful not to touch any program files. All I took (and fortunately, all I needed at this point) were data and text files. These were transferred to the disk on the new computer. Of course, I ran at least three virus checkers after restoring the files and before running any programs on the machine.

It took nearly four days of work and at least 36 straight hours without sleep, but I managed to get my system up and running. I am still finding a few data files that are missing or out of date, but nothing really important was lost.

CONCLUSIONS

This was definitely not the way I wanted to learn about viruses, but learn I did. I now have a greater appreciation for just how devastating they can be. I am, by no means, an expert — just a well-seasoned victim. I am sure there are many reading this column who know far more about the subject than I. If any of you have time, feel free to drop me an e-mail message with information about viruses. If I get enough material, I will do a follow up to this article about finding, purging, and preventing viruses.

I also learned not to trust any single virus checking program. To be truly assured that a virus has been deleted from your system, I highly recommend that you run at least two programs — three if you have the time.

You also have to be sure that the program or programs you are running are the latest updates. A program that won't find the latest viruses can be virtually useless. This was the case with the first program I ran. It simply didn't know about the virus wrapped in the MS Word file. I used it for months in the false belief that I was safe.

I also learned that if tragedy strikes, try to keep a cool head. You have to resign yourself to the fact that you will lose some of your data, but if you take things one step at a time, you can get almost everything back. The best way is to restore things carefully, check everything as you go and don't miss anything. This is not the time to rush into things. Take it slow and think about each step before you take it.

The experience again taught me the value of backups. The more backups you have, the greater the chance of restoring your data in the event of a loss.

I also found a number of places to get information about viruses. All were extremely helpful. A list of these helpful locations follows.

To be truly assured that a virus has been deleted from your system, I highly recommend that you run at least two programs — three if you have the time.

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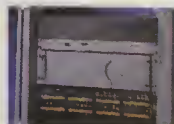
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Web Sites Specializing in Information about Viruses

VIRUS BULLETIN

<http://www.virusbtn.com/welcome.html>

Virus Bulletin is the technical journal on developments in the field of computer viruses and anti-virus products and an excellent source of information on viruses. Here you will find databases of information, reviews of software and links to virtually every virus checking program available.

HITCHHIKERS.NET

<http://www.hitchhikers.net/av.shtml>

This is an excellent site for finding, identifying, and cleaning viruses. Here you will find information on how to find a virus, step-by-step instructions on how to handle an infection, and how to disinfect the virus once found. There is a database of known viruses and even a place to report viruses to prevent them from spreading. There are also links to the home pages of the major virus checking software makers.

SYMANTEC CORPORATION

<http://www.symantec.com/psy95.html>

This is the gateway to the Symantec AntiVirus Research Center. Here you will find information on Norton AntiVirus and trial versions of the software along with tons of information on detecting and eradicating a virus.

MCAFFEE ANTIVIRUS

<http://www.mcafee.com/suport/techdocs/vinfo>

Lots of information along with trial versions of McAfee Antivirus software.

Here are some more sites to check out if you suspect a virus:

THUNDERBYTE

<http://www.thunderbyte.com>

DARYL'S ANTI-VIRUS PAGE

<http://moose.erie.net/~daryl/virus.html>

HENRI DELGER'S VIRUS HELP AND INFORMATION

<http://pages.prodigy.com/virushelp>

DIGEDAG'S ANTI-VIRUS PAGE

<http://www.rzuser.uni-heidelberg.de/~mbruner/virus.htm>

KEN DUNHAM'S ANTI-VIRUS PAGE

<http://antivirus.miningco.com>

EDINBURGH UNIVERSITY'S PC VIRUS PAGE

<http://mft.ucs.ed.ac.uk/pcvirus/pcvirus.htm>

HAVS (JOE HARTMANN'S ANTI-VIRUS SITE)

<http://www.psnw.com/~joe>

DAVID HULL — COMPUTER VIRUSES AND SECURITY

<http://www.einet.net/galaxy/Engineering-and-Technology/Computer-Technology/Security/davidhull/galaxy.htm>

INDIANAPOLIS UNIVERSITY COMPUTER VIRUS RESEARCH CENTRE

<http://www.indyweb.net/~cvhd>

MIKE LAMBERT'S VIRUS INFORMATION SITE

<http://www.frontiernet.net/~mlambert>

DOUG MUTH'S (ANTI)VIRUS HOMEPAGE

<http://www.ot.com/~dmuth/virus/virus.html>

NCSA (NATIONAL COMPUTER SECURITY ASSOCIATION)

<http://www.ncsa.com>

OPEN UNIVERSITY ANTI-VIRUS PAGE

<http://www-tec.open.ac.uk/casg/avone.html>

OXFORD UNIVERSITY COMPUTING SERVICES AV PAGE

<http://info.ox.ac.uk/OUCS/micros/virus>

PENN STATE ANTI-VIRUS PAGE

<http://cac.psu.edu/~santoro/cac/virus.html>

ROB ROSENBERGER'S 'COMPUTER VIRUS MYTHS' PAGE

<http://www.kumite.com/myths>

SANDRIN ANTI-VIRUS CONNECTION

<http://www.geocities.com/Tokyo/1133>

SISL (SECURE INFORMATION SYSTEMS LTD)

<http://www.sisl.co.uk>

SLOVAK ANTIVIRUS CENTRE

<http://ftp.elf.stuba.sk/packages/pub/pc>

THOMAS JEFFERSON UNIVERSITY'S VIRUS INFORMATION PAGE

<http://www.tju.edu/tju/dis/ic/virus>

THE VHC (VIRUS HELP CENTRE) IN SWEDEN

Swedish: <http://www.vhc.se>

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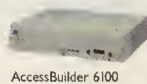
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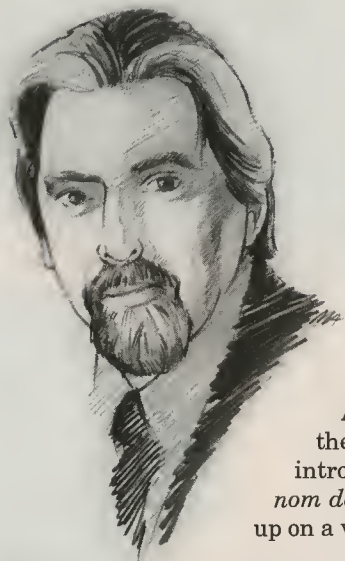
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@INTERNET by Thom Stark

I READ THE NEWS TODAY, OH BOY...

I was first turned on to Usenet in 1980, the year after it was created.

At the time, it was so small that my friend the supercomputer kernel hacker — who introduced me to Netnews and went by the nom de news of Baba ROM DOS — could catch up on a week's worth of postings in about an hour.

My, how times have changed.

Today, depending on how many regional, local and "fringe" feeds you choose to carry, Usenet has grown from a mere couple of dozen to more than 22,000 total newsgroups. At its inception, it carried fewer than a dozen new messages a day. Now it accounts for 8 gigabytes or so of daily traffic. Then, it was transmitted via 300 baud acoustically-coupled modems, using UUCP (Unix-to- Unix-CoPy). Now it's distributed at Ethernet and higher speeds courtesy of NNTP (Network News Transfer Protocol) — and, oddly enough, UUCP for efficiency's sake.

The content, architecture, and administration of Usenet have also all changed radically over the nearly two decades of its existence. What once was a compact selection of topics almost exclusively scientific and technical in nature has evolved into a bewildering sprawl of categories so vast as to overwhelm the senses and challenge the courage of any responsible News administrator. Even the original set of top-level hierarchies has joined the dodo, the buggy whip and Joe Camel in what Leon Trotsky called "the dustbin of history." In terms of sheer volume of data, the ochlocratic a.l.t. hierarchy has become the tail that wags the Netnews dog and the once and future Usenet Backbone Cabal has given way to the "Internet standard model" of government by consensual anarchy.

Marx would have said it was historically inevitable.

Then again, Marx was a nitwit.

A crowd of people stood and stared...

It's hard to imagine, but in the early years, the Internet — then known by its original moniker, "ARPAnet" — was a pretty exclusive place. Simply being physically able to connect to it wasn't nearly sufficient grounds to justify your admittance to this rarified environment. You not only had to be a research laboratory with defense contracts, but your users often had to be individually cleared for access to this Defense Department-funded network. Often, that meant some of your staff had access and some didn't.

And that meant you had a problem. The Captain in *Cool Hand Luke* called it a "failure to communicate."

Still worse, the medium of choice for mass communication on the ARPAnet was the mailing list, with all the overhead, relatively high bandwidth and duplication of effort that entails.

In 1979, a group of computer scientists at Duke University and the University of North Carolina (primarily Steve Bellowin, Stephen Daniel, Jim Ellis, and Tom Truscott) came up with a better way, courtesy of the then-new Unix version 7 and a handy new utility called *UUCP*. The Duke/UNC crew realized that *UUCP*, despite its poor documentation, made possible communication between Unix hosts via dial-up modem lines. Unix now also offered store-and-forward and remote execution capabilities that hadn't existed prior to version 7. Those two new functions meant that the UNC lights could build a low-speed, *UUCP*-based communications network separate from the ARPAnet — one to which any organization willing to spend the money on modems and Unix boxes could belong.

Now, in 1979, modems were agonizingly slow. Factor in long-distance charges and it was clear that a more efficient model than the ARPAnet mailing lists was going to be needed, if this alternate communications net was ever to work. In an act of collective brilliance born of necessity, the distributed computer BBS came into being. It found its first formal expression in a package (authored mainly by the Duke contributors) called *A News*.

A News was clunky. The mail relayer daemon and the newsreader were one, monolithic piece of software. The user interface sucked and the article format wasn't readily extensible and it didn't quite conform to the ARPA mail spec, so interoperation was a problem.

But, what the heck, it worked, more or less. And after Jim Ellis gave a talk to attendees at the Winter 1980 Usenix conference on what he and his co-conspirators at Duke and UNC had cooked up, the Unix community — most of which was still on the outside of the ARPAnet, looking wistfully in — rushed to embrace it.

Made the bus in seconds flat...

Usenet — a play on Usenix — then exploded in popularity. It swiftly grew from 3 initial sites in 1979 to include more than 600 by the end of 1983. *A News* was hopelessly — and increasingly — inadequate for the rapidly-expanding load. Beginning in 1981, it was extensively rewritten by Matt Glickman and Mark Horton at U.C. Berkeley, who named their creation *B News*. They goosed the daemon's performance and reworked the article format to make it slightly more extensible. They also made it more nearly compliant with the ARPA mail standard, somewhat easing the interoperability problem.

Thom Stark is president of **Stark Realities**, an Internet business consulting firm based in the San Francisco Bay Area. He also conducts seminars and tutorials about the Internet at trade shows and for business and user groups. He is the author of the serialized online science fiction novel, *A Season in Methven*, (www.starkrealities.com/Methven) and is also a semi-regular panelist on ISP-TV's "State of the Net" cybercasts. Mr. Stark's e-mail address is thom@starkrealities.com and he maintains a non-commercial web site which focuses on IP networking technologies and policy issues at www.starkrealities.com.

[illegible]

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Once he finished *B News*, Horton authored Internet RFC 850, (www.cis.ohio-state.edu/htbin/rfc/rfc850.html) *Standard for Interchange of Usenet Messages* to let ARPAnauts know how Usenet worked. He was careful to include a disclaimer that RFC 850 did not "specify an Internet standard," but, even then, the handwriting on the wall was pretty clear.

Even *B News* didn't last very long. The server/client bundle was unwieldy and there was still considerable room for improvement in performance of both the server and the transport. Thus, in 1985, Geoff Collyer and Henry Spencer of the University of Toronto rewrote *B News*, dropping the bundled news reader and tweaking the server and transport. They called the result *C News* and, subject to bug fixes and incremental twiddling, it's still the standard Internet news software today — although INN (which was developed from scratch in 1992) gives it a run for its money (they're both free-ware) and *D News* is steadily picking up adherents.

What *C News* didn't do was to mess with the article structure that Horton and Glickman had established with *B News*. In 1987, Rick Adams reworked Mark Horton's RFC 850 to reflect the changes that the last implementation of *B News* had wrought in the structure of Usenet articles and posted the codified update as Internet RFC 1036 (www.cis.ohio-state.edu/htbin/rfc/rfc1036.html). That RFC — which continued the fiction that it did not reflect an Internet standard — is still current, despite its age and the modern infiltration of MIME inclusions into Usenet articles.

Perhaps the single most important technical change of the mid-1980s was the development by Brian Kantor and Phil

Lapsley (with help from Erik Fair, Steven Grady, and Mike Meyer, among others) at the University of California in early 1986 of the Network News Transfer Protocol Reference Implementation, which accompanied Usenet's integration into the Internet proper. Although NNTP suffers from its own set of performance problems, (which is why UUCP is still in widespread use as a news transport mechanism, even in the pure Ethernet environment of the Internet proper,) the Reference Implementation became and remains the standard.

In June 1994, Henry Spencer attempted to update RFC 1036 in a draft (<ftp://zoo.toronto.edu/pub/news.txt.z>) formally known as *News Article Format and Transmission*, but he eventually gave up on the effort. Even so, the de facto current best practices working standard is generally taken to be a combination of his draft and RFC 1036.

In July 1997, a Usenet Article Standard Update Working Group (www.landfield.com/usefor) was formed with a charter to formalize and document the current and proposed extensions to the Usenet article format in a standards-track successor to RFC 1036. Among other things, this effort would address signing and authentication of both regular articles and control messages, (particularly cancel requests) the use of non-ASCII characters in headers and bodies, standardize article body conventions in general and the use of MIME in particular and to revise upward the 60-kilobyte limit on article size established in RFC 1036. If they meet their announced timetable, their draft will be submitted to the Internet Engineering Standards Group (IESG) sometime in mid-1998.

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Four thousand holes in Blackburne-Lancashire...

Meanwhile, it became increasingly clear that the original three Usenet newsgroup hierarchies — **net**, **fa** and **mod** (respectively meaning *Usenet-wide*, from ARPAnet and *moderated*) — were simply too general to be usefully meaningful as the number of subgroups and the range of subjects they addressed grew and grew and grew. In 1986, the Backbone Cabal, (so-called by virtue of its members' willingness to foot the bill for the long-distance charges that distributing Usenet feeds around the globe incurred,) which made all the important decisions about Usenet, decided it was time to restructure. The result, which took until 1987 to fully take hold, was known as the *Great Renaming*, and it resulted in the creation of the seven "official" Usenet global hierarchies we know and love today: **comp**, **misc**, **news**, **rec**, **sci**, **soc** and **talk**.

The *Great Renaming* was all very well and good, but the "official" hierarchies evinced an increasingly unacceptable degree of conservatism that was even more strongly reflected in the policies by which the Cabal approved the creation of new newsgroups. Even though a somewhat democratic procedure for new group creation by interested parties formally existed, the members of the Cabal reserved the right of veto over even the most popular proposals via the simple mechanism of refusing to carry new groups of whose charters they disapproved.

In early 1986, the Cabal turned down **rec.music.rock-n-roll**. It refused to have anything to do with **rec.drugs**. And, of course, **sex** was the real bugaboo. The poor Cabalistas were all terrified that one of the suits upon whose favor their bud-

gets depended might discover **rec.sex**, for instance and raise a stink about misuse of organizational resources, embarrassing individual Cabalistas and perhaps even getting them shut down. So they refused to carry **soc.sex**, even though the popular vote was overwhelmingly in favor of its creation.

That's when John Gilmore, employee number five at Sun Microsystems, co-founder of the Electronic Frontier Foundation and original host of the cypherpunk mailing list, stepped in to create (with help from Brian Reid and Gordon Moffett) the **alt** hierarchy. Originally, the **alt** groups were distributed via a UUCP network completely separate from the one the Cabal maintain — and which Gilmore financed most of out of his pocket. **Sex** found its home there, as did **drugs** and **rock-n-roll**, along with gourmet cooking, discussions of alien abduction and a host of other topics too weird, too controversial or just plain too much fun for the stuffy confines of the seven "official" hierarchies. Eventually, demand for the **alt** groups grew to the point that, today, their inclusion in a basic news feed is more-or-less a given.

Gilmore's original injunction was to "use common sense" in **alt** newsgroup creation, but nowadays, it has become the wild card in the Usenet deck. Although theoretically newsgroup proposals are supposed to be submitted to **alt.config** to test their support first, in practice, any Usenet admin can create an **alt** group. That's how **alt.swedish.chef.bork.bork-bork** came into existence — as a joke — and became the first one of a flood of supposedly humorous **alt** group names.

The proliferation of joke newsgroups led some thoroughly cheesed-off news admins to begin issuing **rmgroup** control messages to try and prune the **alt** thicket. That, in turn, led



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other News admins of a more anarchic bent to re-send those same messages as *newgroup* control messages under the names of the wanna-be net.cops who had issued the originals. That game quickly ended in a stalemate which inevitably left the joke groups intact — although largely unvisited by anyone except the massive influx of Ponzi schemers that coincided with America Online's opening of its Usenet gateway in early 1996 and the sex site operators who have relentlessly spammed the *alt* groups since reliable mechanisms for securely accepting credit card information first came into widespread use in mid-1996.

Of course, the *alt.sex* family now gets by far the most spam. That pumps up the volume of *alt* posts considerably. So, too, does the prodigious traffic in the *alt.binaries* tribe — which once upon a time was all uuencoded, but is now increasingly MIME encoded.

I'd love to turn you on...

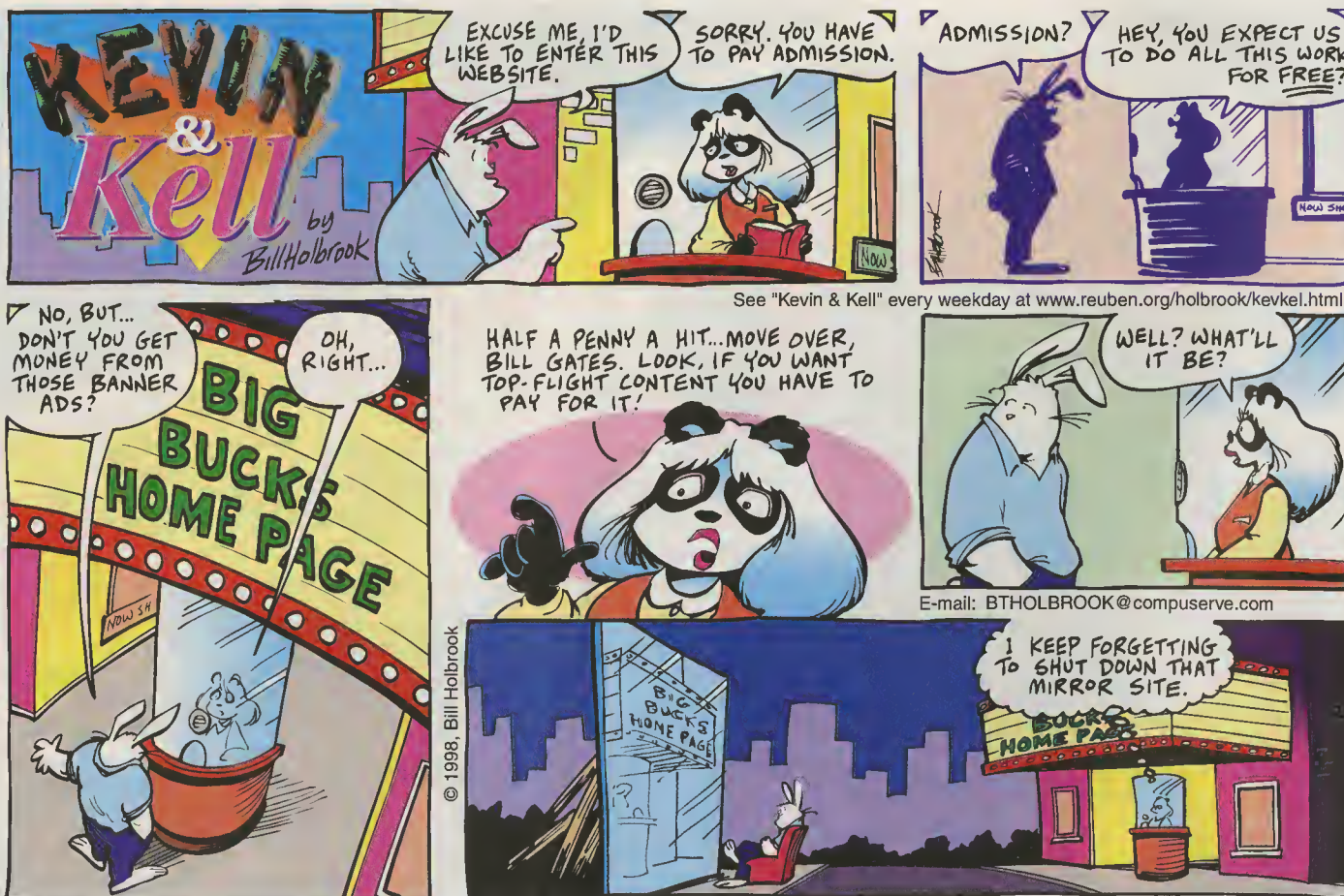
Some of this stuff I've known for years. Some of it I only recently learned, courtesy of *Managing Usenet* by Henry Spencer and David Lawrence (copyright 1998 by O'Reilly & Associates, \$32.95, ISBN 1-56592-198-4). It's a great book that covers the history of Usenet in both capsule form in the Introduction and in greater depth in Chapters 16 and 17. *Managing Usenet* also goes into considerable detail on how to install and configure both *C News* and *INN*, the two major Unix-based Net news relayers, and it nicely explains the architecture and administration of Usenet itself. I recommend it without reservation for Unix News admins — and for aficionados of other operating systems with the admonition that you'll have to go elsewhere for instructions and advice on installing relayers for other platforms.

Speaking of which, you can get the C News relayer and NNTP Reference Implementation at <ftp.cs.toronto.edu/pub/cnews.tar.z>. INN is available at www.isc.org/inn.html. (For INN, you'll need a lot of RAM, recent versions of *egrep* and *awk* and the latest build of Perl, too.) Other Unix relayers you might consider are Cyclone, (www.highwind.com) the very fast Diablo, (www.backplane.com/diablo) or Netscape's Collabra Server, (www.netscape.com/comprod/server_central) which is also available for Windows NT.

Since that takes us to the subject of NT, Microsoft's Internet Information Server (www.microsoft.com/iis/default.asp) includes a News server — although you should be aware that this "free" software will only install to NT Server 4.0, rather than the less-expensive Workstation version. MetaInfo's NewsChannel 2.0 (www.metainfo.com/products/newschannel/index.htm) also runs on NT. Alternatively, Ukiahsoft's NetRoad NewsServer (www.ukiahsoft.com/newsserver.html) runs as an NLN on NetWare 3.x, 4.x and IntraNetWare servers, and D News (www.netwin-site.com) comes in versions that run on a dozen flavors of Unix, as well as on NT, NetWare, OS/2, the MacOS and Vaxen.

Having read the book, you'll just have to look at some of the groups that deal with various aspects of Usenet itself, such as: *news.announce.newusers*, *news.announce.newgroups*, *news.groupsn*, *news.admin.misc*, *news.answers* and (for information about the *alt* hierarchy) *alt.config* and *alt.answers*.

Goo-goo-ga-jub. ♦



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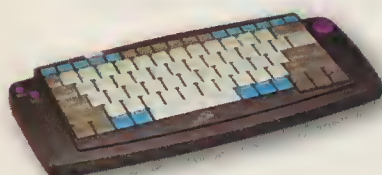
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ISP TECH TALK by Avi Freedman

WEB PROXY CACHES AND SATELLITE-BASED BANDWIDTH AUGMENTATION

I promise we'll talk again about BGP real soon. In particular, about how to share the traffic load properly when multi-homed.

hit rate" (percentage of HTTP requests that are serviced by the cache).

Avi Freedman started Net Access, the Philadelphia area's original ISP, in October 1992. Net Access is currently a regional ISP, with and more than 200 downstream Internet providers and dedicated-line customers, and thousands of dial-up and web hosting customers. Net Access services Boston, New York, Philadelphia, Baltimore, Washington, DC, Chicago, and San Francisco.

Avi has been very active on the inet-access mailing list and is a vocal proponent of the continued viability of startup and existing ISPs. He is also on the ISP/C Board as Director at Large and the ARIN Advisory Council. ISPs can join inet-access by e-mail to inet-access-request@earth.com with SUBSCRIBE in the subject. Avi can also be reached at freedman@netaxs.com or netxs.com.

I notice that Jack's all hot about caching technology, so I thought I'd give a bit of a technical background on it. In a month or two, I'll hopefully be able to give some real-world experience, as we're considering building some web caches to improve quality for our downstream ISP customers. Of course, U.S.-based ISPs know almost nothing about caching compared to our European and Australian/Pacific brethren, since our bandwidth is essentially free compared to theirs, but we're interested and should be capable of learning quickly...

WHAT IS CACHING?

The idea/goal of caching web (HTTP) content is this:

When someone requests a web page, intercept that request, either by playing TCP/IP tricks or by having the user's browser send the request to you. If you (the intercepting box, or "proxy") have the web page requested, and you think it's a fairly recent copy, and it's something that you think is "static content" (not likely to be constantly changing) and it's something that your user is authorized to retrieve, send it back to the user without having to use Internet bandwidth to get the data or wait for the data to come back.

What this means is that the data is returned faster to the end user — and the end user, his ISP, and you (if you're the provider to the ISP) — saved on Internet bandwidth.

If bandwidth is expensive, this is a huge win! For example, until recently in Australia, bandwidth cost AU\$.19/megabyte retrieved from the Net to the ISP. Outbound bandwidth was (and is currently) "free." But disk space only costs US\$.04/megabyte, give or take a few pennies. So it's cheaper to save everything ever retrieved on disk if someone's going to access it just once more!

In the U.S. (and elsewhere), caching is the big win. When a national provider's network is having a very bad day, aggressive caching is a way to get the users zip-pier access to the data. This makes them happy and reduces the number of "the Net is slow" calls you take.

HOW HUGE A WIN?

With a 4 GB disk, 128-256 MB of RAM, and a decently fast CPU, it's fairly easy to get 25-30 percent "cache

Getting much more than that is trickier, but 40 to 45 percent is somewhat achievable. More disk is necessary, but the key factor is a larger user population.

USER POPULATION SIZE

The more end users that are hitting on the cache, the greater likelihood that the cache will have a higher hit rate, because the chances are better in a larger user population that two people want to go to the same place on the Web.

It's possible to set up hierarchies of caches using ICP, the Internet Cache Protocol, and to configure your cache to get the data requested by users of other caches in the cache hierarchy, thus simulating a larger user population and making your cache more effective. Basically, cooperating caches (either on the same network or on networks of friendly ISPs) query each other for content before going out to get it from the Internet.

A simple modification allows you to simulate the larger user population. When your sibling asks "do you have <http://www.reallystick.com/sticky.jpg>?" You say "no." Then, wait a minute and ask it for that URL. It'll have it (if it's to be found on the Net). You retrieve it, and have it in case one of your sticky-keyboard-crowd users wanted it.

A common architecture is to have caches peer (through routers) across smaller regional exchange points or via private interconnects. Of course, if ISP A's cache sends twice as much data to ISP B's cache as it gets back, payment may need to flow from ISP B to ISP A. Of course, ISP A already had the data, so it's "found money." So this data doesn't necessarily need to be charged for at the full rate.

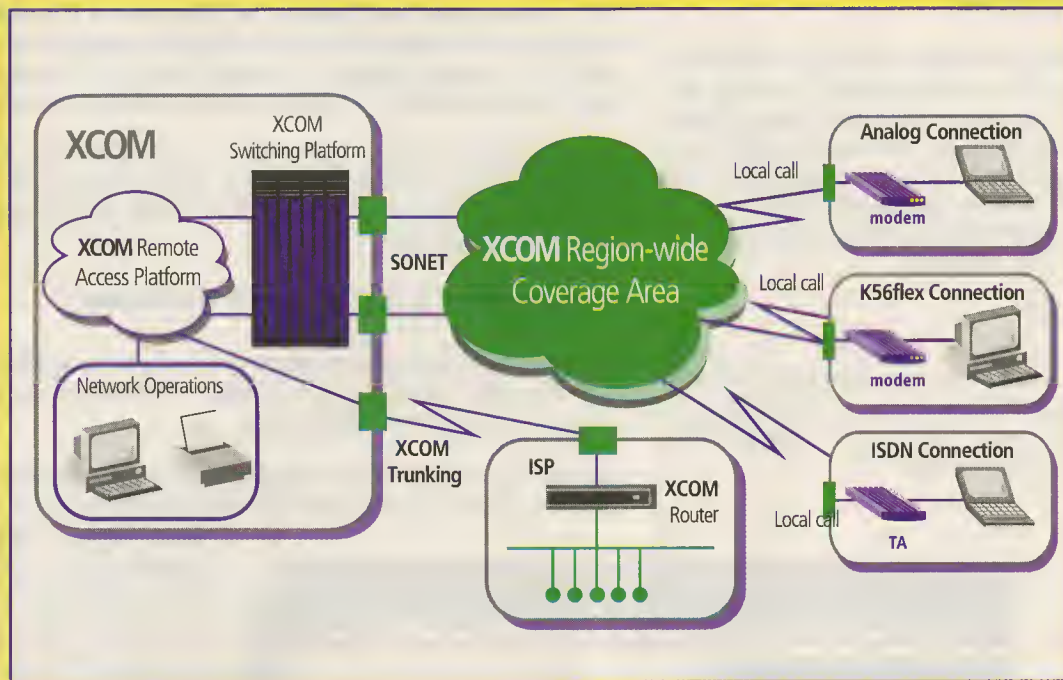
PREPOPULATION

Cooperating caches working together as above are one way of prepopulating caches with content. The idea is to get data into your cache — even if you'll never use it — on the off chance that a user will want it, and that you'll then save expensive Internet bandwidth — and give better service to your users.

Another method is to examine sites that are typically in the cache, and have your cache check the validity and re-scan the popular sites every morning at 9-10 AM, after, say, the news sites are often updated.

"A Price Break for ISPs"

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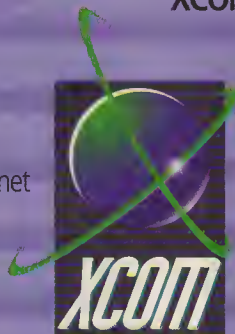
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Often, this prepopulation is done when bandwidth is cheaper or when the network is just less utilized. Your upstream provider may not agree, but you might as well blow some bandwidth at this time (if you're paying "flat-rate pricing," as in the U.S.) in hopes of better service later.

We're going to experiment with this with some other ISPs, so it's quite possible that we'll have some idea of good prepopulation strategies to present here in a few months.

PREPOPULATION: SKYCACHE

Another approach is to have a managed service that feeds you with a "cache prepopulation" feed via satellite. That way, terrestrial backbones aren't congested with the prepopulation traffic — and, without participating in ICP meshes (meshes of cooperating caches), you get the benefit of a potentially huge user population. As I write this, things are just starting to get in gear with SkyCache, so hopefully there'll be some technical news about it to report in a few months.

PROBLEMS: COPYRIGHT

Without going into detail, there's some question about whether keeping copies of other people's data is legal — whether it's a copyright violation. Common sense tells me no, it shouldn't be, but the legal system may decide otherwise.

PROBLEMS: STALE DATA

You're the proxy cache. If you have a copy of a web document in your cache, you could just return it to the client. But should you? How do you know it didn't change? Well, you could make a dynamic HTTP request every time to see whether the document has been modified since you retrieved it (using the If-Modified-Since request header). Even though that request takes a small amount of bandwidth, it adds latency to the operation, defeating the idea of using caching to raise quality.

Usually people set some intermediate max-time-to-cache that they feel they can live with. If 24 hours proves to be reasonable, you should just seek cache software that can re-check all documents overnight.

PROBLEMS - CACHE BUSTING

Many content providers don't like the idea that you could be caching content. They need to know how many times someone saw a banner ad, for example.

How to do this? Modern browsers and caches should recognize and honor the "Pragma: no-cache" directive and "Expires: 0" lines.

Also, caches can't store CGI-bin and other dynamic content for later retrieval. Making ads come back from CGI and server-side includes, winds up defeating caches. If the site designers are smart, they'll write cgi to generate references to banner gifs and jpegs, which themselves can be cached, saving bandwidth and download time, and making the site seem "faster" to the user.

SO WHAT CAN I EXPECT?

With a moderately fast Pentium, 64 MB, and a 4 GB disk, you can expect a 25 percent cache hit rate. More important than the bandwidth savings, though, is probably that you'll have much lower latency on those 25 percent of your customer requests.

It'll take more memory and disk — and more importantly, more traffic, to get higher hit rates. 35-40 percent hit rates should be obtainable with a few T-1's worth of web requests going through the box.

HOW DO I PUT A CACHE IN MY NETWORK?

One way to go about it is to convince all of your customers and your customers' customers to set their web browsers up to use your proxy cache server specifically.

Another approach is to use routers to redirect all traffic destined to port 80 (the standard HTTP port) to the proxy cache

box, which then responds to the client as if it were the remote host. Most web proxies will use their own IP address to fetch content. If they do that, they only have to be in the outbound path from the web client. Some web proxies (such as Mirror Image's) need to be bidirectionally in the loop because when data needs to be fetched from a real off-site server, they make requests as the web client, not with the proxy's own IP address.

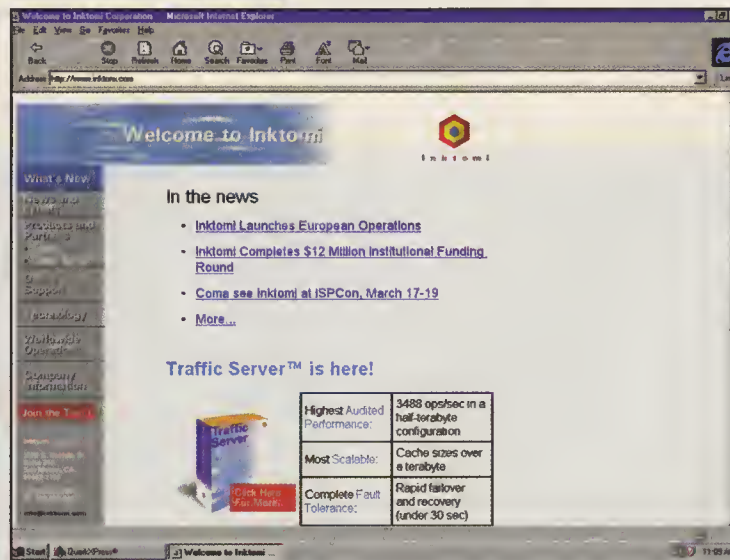
For our application, the Mirror Image approach

doesn't work, since we see outbound packets from many of our dual-homed T-1 customers, but are not always symmetrically in the "return path."

PROXY CACHE SOFTWARE

The most popular free software is Squid, available at www.nlanr.net/Squid. A list of other proxy-caching software is available at <http://ircache.nlanr.net>, as is a description of their Global Cache Mesh project.

Inktomi (www.inktomi.com) and Paul Vixie's Mirror Image (www.vix.com) are commercial proxy-caches. ♦



POP quiz

PSINet is:

- a) A wholesale provider of Internet private-label and services for ISPs
- b) The only national Tier 1 backbone network offering free peering to ISPs
- c) Now offering economical transit services
- d) Offering 100 days of free access for 100 accounts*
- ☒ e) All of the above

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MARKETING 101 for ISPs

Using Your Call Center as a Marketing Tool

— Michael Greenbaum



Michael Greenbaum is vice president of sales and marketing at AppliedTheory. He previously held senior management positions in the software, Internet, online services and hardware industries. At Borland International he was vice president of marketing responsible for all marketing and public relations functions including the annual user's conference. As a vice president at Bell Atlantic Internet, he was responsible for that company's strategy to develop an Internet presence and later to be an Internet service provider in its service area. Prior to that, he was general manager of Prodigy Services Co., the pioneering online service and was instrumental in applying the ease-of-use characteristics of the consumer to business applications. His business experience began in sales, marketing and business development with IBM.

Every problem is an opportunity. Your help desk or call center is the lightning rod for customer problems. With the right mind set, you can turn that lightning rod into a beacon that communicates the quality of your service. Service is what you are selling, isn't it?

It is easy to get mired in the swamp of providing access and fighting alligators, and to view the call center as just one more bunch of alligators. This business would be great if it weren't for those damned users. The call center is the tool for keeping those users off our backs. From that perspective, the objectives are to minimize user unhappiness, minimize the disruptive effects of that unhappiness on operations and maybe, if we value quality of service, to learn from the failures. Viewing the call center as a cost center can blind you to the real opportunities.

The opportunity is to view service from the broader perspective. Problems are inevitable, and what users want to buy is confidence that they will be rare, and that when they do happen, they will be as painless as possible. Problems are your opportunity to stand out from the pack. It is hard to make your access service noticeably better than your able competitors. It is not so hard to make your customer service stand out. That is where you can find leverage.

STRATEGY AND TACTICS

Get religion. The first thing to do is focus on customer service as a critical success factor that is always in mind, from the top executive to the most junior operator or receptionist. Make sure it is measured and that employees know they will be rewarded based on it. Look outside at how customer service has become a key strategic factor in all industries, and look particularly at the "best practices" that are applied to call centers (some resources are listed below). Look beyond the cost center.

Start with a survey of user perceptions and desires. Once you get a feel for "best practices" for customer service call centers, find out how you stack up, in the eyes of the people who count. Learn what features and services are most important to your customers. Learn what

they think of what you deliver now, and where they want you to improve. It might be worth having a consultant help with this for two reasons: this person may have a clearer idea of what to look for, drawing on external experience, and an independent view may provide more honest feedback than your own people would.

Set appropriate call center service objectives. Customers generally want 24x7 live coverage. They also want short time-to-answer. Both are expensive, but think hard about delivering as much of that as possible, and about how to justify some of the cost as a marketing investment. It is a challenge to deliver optimum service efficiently. Look outside and put your best thinking into how to get the most bang for your buck by clever scheduling and use of people.

Center on the customer and the customer rep. Companies in all industries are shifting to customer-centric processes and organization. The customer views all his interactions with you from an integrated perspective, and you better be able to see him from the same holistic viewpoint. He should not have to go from person to person, and the rep he talks to should have the whole picture of the customer at his fingertips. What services does the customer use, what equipment does he have, what is the history of any open problems and any prior problems which may be relevant (to him, if not to you)? Show that you have your act together.

Be flexible and proactive. The key to good service is getting ahead of the problems, and showing you care and are on top of things, before your customers become dissatisfied. It is easier to keep them happy. Do your best to alert users to problems before they know they exist. Warn them of planned work, and call them about failures that affect them before they call you. Procedures should adapt to customer needs, not the other way around. Your reps' training should instill resourcefulness. Their dialog should use the most effective channel for example, it may be better to call users in response to their e-mail whenever there is doubt that you understand their problem or that they will understand your response.

Use the best tools for the job. There are a wide range of powerful tools for managing calls, tracking user problems, and managing network problems. Pick the best tools consistent with your needs and integrate them to the fullest extent possible. Ideally, when a customer calls or e-mails, the rep should automatically get plugged in to all the relevant information about the customer, his history, and the state of the network. Get your support reps involved in tool selection and use so they can tell you what they need and ensure that the tools are configured to best serve those needs.

Provide service above and beyond the call of duty. It may cost a little more, but you can distinguish your service and make it indispensable. Encourage your reps to act as advocates for customers who have a problem anywhere on the Internet. Contact a site that you have no responsibility for, on the customer's behalf, if that will help solve the problem. Some customers are well aware that you have no responsibility for that, some are not, but all of them appreciate it. Often we can do it far more effectively than they can. Taking responsibility is a business decision, not a legal one.

Know thy customer. "Relationship marketing" exploits your knowledge of how to deliver the services your customers want better than any competitor can. Your customer service reps are central to that knowledge, and its use. They hear what the customers are asking for and what they like or dislike. Be sure that wisdom on customer expectations gets fed to marketing and product development groups. Conversely, your reps are a communications channel to the customer. Be sure they are equipped to relay messages on new products and services, network enhancements, etc.

Sell service. What else do you have to sell? If you do a good job of customer support, make sure to trumpet it. Advertise your coverage and quick response. AppliedTheory found that it achieved an average time-to-live-answer of six seconds, and that that was 15 times faster than other leading ISPs, and 10 times faster than other industries. (ISPs generally do pretty poorly, so it is not hard to shine.) We made sure our prospects and customers could read about it (check it out on our Web site).

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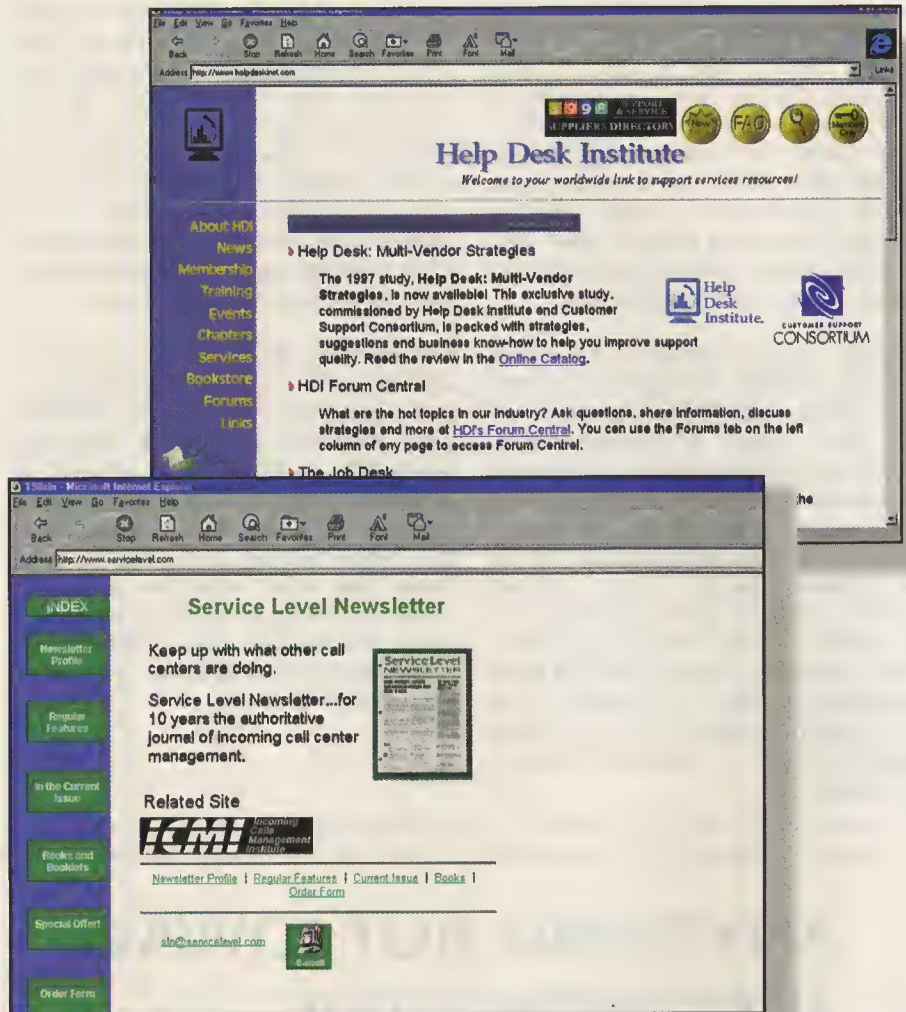
Useful resources for more information on this topic

The following web sites offer valuable information and additional links:

- The Help Desk Institute is a leading support organization for technical help desks offering either internal or external customer service. The site includes a articles from their magazine, a buyers guide, and job postings, and offers useful publications. <http://www.helpdeskinst.com>.
- The Incoming Calls Management Institute is more oriented to the mechanics of managing calls and staffing for call centers of all kinds. It includes books (with chapter-length excerpts), newsletter excerpts, and resource links. <http://www.incoming.com>.
- Service News is a monthly newspaper devoted to IT service, support, and training. The site includes a full article archive, buyers guide and product reviews, job postings, and a knowledge base. <http://www.servicelevel.com>.
- The Software Support Professional's Association, (SSPA) focuses on the software industry. The site includes partial archives of a newsletter and magazine, surveys and white papers, chat roundtables, and other services. <http://www.sspa-online.com>.
- The Help Desk Mailing List Server (with a digest option available) has an associ-

ated Help Desk FAQ that has extensive background, product information, and links. <http://www.duke.edu/~pverghis/hdeskfaq.htm> and, for the list: LISTSERV@wvnm.wvnet.edu (subscribe HDESK-L firstname lastname). ♦

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WIRELESS Data Developments by Steve Stroh

MORE ON "THE LAST FIFTY FEET"

The airwaves are about to get crowded within the home!

In my March 1998 column I wrote about the ShareWave system (www.sharewave.com) that would act as a home server and Internet gateway- an "information furnace" that would use wireless technology to connect its various components, including the various PCs in the home. The ShareWave system isn't available yet and it already has some competition.

DATA GENERAL NETWORK UTILITY BOX

Data General (www.dg.com) has demonstrated what it calls a network utility box, or NUB (www.thiin.com/tspage.html) which acts as a wireless hub for Internet access and peer-to-peer networking for small office and home use. The NUB uses the 2.4 GHz band to connect up to eight computers at 1 Mbps within a 150 foot radius. Initially, the NUB will connect to the Internet using a conventional 56K dial-up modem, with other connection options such as ISDN, xDSL, cable modem, etc. to follow. It's configured and managed through the use of a web browser. In addition, the NUB includes features such as a basic firewall (including an HTTP proxy), dial-on-demand and automatic disconnect when idle, and the usual alphabet soup of acronyms such as DHCP, PPP, CHAP, and PAP.

One report I read stated that the price for the NUB could be as low as \$500, and the cost of the wireless interface for the computers could be as low as \$20. The low price reflects a lower data transfer rate — higher priced units in the Thiin/NUB product line buy you a faster data transfer rate. That's still pretty startling considering that this is a wireless networking product that is intended to be used by unsophisticated users in homes, home offices, or small offices.

I've done some consulting in an office that was originally networked using 10base2 (thin 50 ohm coax) cable. One of the discoveries when new computers were installed was that the coax, specifically the BNC connectors, weren't installed very well. Because of this, there was a lot of troubleshooting required to get the new PCs operational, much less stable.

In this office, the logical next step would have been to rewire the offices, probably with 10baseT cabling. The NUB eliminates the need for small offices to deal with network cabling at all.

WEBGEAR AVIATOR

Another product targeting the same "wireless within the home" niche is Web-Gear (www.webgear.com) with its Aviator Wireless Networking product. Aviator consists of a small module about the size of a deck of playing cards that



plugs into each PC's parallel port and provides wireless networking within a 75 foot radius between two or more (exactly how many more isn't specified) PCs using Windows 95's built-in networking software.

Aviator is powered from the parallel port. It operates in the 902-928 MHz band and its "raw" data transfer rate is 150 Kbps, but compression is used and WebGear claims to achieve the equivalent of 200-300 Kbps.

Included with the Aviator Wireless Networking Kit is Technocratix's (www.technocratix.com) WebEtc Internet Gateway software. WebEtc acts as an Internet Gateway/Firewall on a PC that has Internet connectivity. WebEtc allows PCs on the network access to the Internet without modems.

WebEtc is only one of a number of products that provide this "extend the Internet connection to the other PCs on the network" capability. In a future column, I plan to evaluate these products that run on Windows 95/NT PCs.

Aviator is shipping now, but as of February 1998, the only distribution channel for WebGear products is the Fry's Electronics chain of stores in California. A list of Fry's stores can be found at www.micronics.com/distvar/frys.html. The phone number for San Jose Fry's Electronics is (408) 487-1000. A WebGear representative told me that the price of the Aviator Wireless Networking Kit (which includes Aviator modules, an ISA parallel printer card, and the WebEtc software) is \$289.

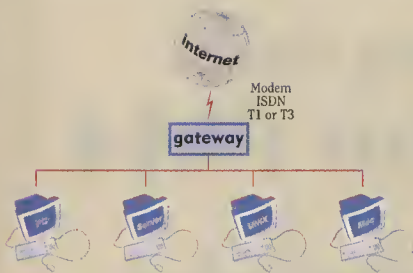
Although I haven't used Aviator, I like it a lot. It fills a much-needed niche that has existed for several years for a low cost, reasonable performance wireless networking. Within the home, it's a badly needed answer to providing a single Internet connection to multiple PCs without the complexity of installing Ethernet cards and running wires between PCs. It's

Steve Stroh learned wireless TCP/IP networking as an amateur radio operator (callsign N8GNJ). He's one of the founding members of the Puget Sound Amateur Radio TCP/IP Group and is secretary for Tucson Amateur Packet Radio (TAPR), a national not-for-profit amateur radio research and development corporation that specializes in wireless digital communications.

Professionally, he's a NetWare and Windows NT administrator for a large company. He's done battle with UNIX a few too many times and mostly lost, so now he's learning Linux and BSDi in preparation for his next UNIX challenge. Steve lives in Woodinville, Washington (in the shadow of Redmond) with wife Tina and daughter Meredith. He can be reached at steve@strohpub.com.

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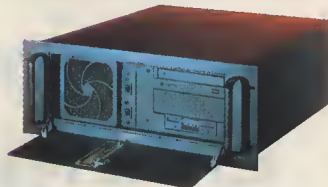
UGate

The UGate is the ideal solution for sharing one PPP Internet connection among a small workgroup. You no longer need accounts or phone lines for each user. Setup is easy. UGate includes a DHCP server that automatically assigns IP addresses to each computer on a local network. Configuration is controlled from your web browser. Dial-on-Demand keeps connection costs down. Finally, there's no special software to install on your clients.



SOHOConnect

SOHOConnect gives you the full set of Internet Servers in a single box: Web, FTP and email. It's perfect for the Small Office/Home Office environment. Like the UGate, SOHOConnect also includes a DHCP server and IP Masquerading. It's configured using a java interface, and can be managed from any web browser.



YESBox

YESBox is Your Everything Server with all the features and muscle you need to support the Internet at your enterprise. It includes a full suite of Internet servers (Web, DNS, FTP, email, etc.) and is configured from a Web browser. In addition YESBox includes advanced features such as a packet filtering firewall and virtual Web hosting. For more demanding needs YESBox is available with a T1 Frame Relay WAN interface and is rack-mount capable. ISPs can do all setup remotely for the end user by creating a YESBox config file and downloading the configuration to a YESBox by modem.

Features Comparison Chart

	UGate	SOHOConnect	YESBox
WAN Interfaces	RS-232 (supports external modem or ISDN)	56K Modem RS-232 for external ISDN	56K Modem T1/Frame Relay 10/100 Mbps Ethernet
LAN Interface	10Mbps Ethernet	10Mbps Ethernet	10/100Mbps Ethernet
Web-based Config	✓	✓	✓
Dial-on-Demand	✓	✓	✓
IP Masquerading	✓	✓	✓
Web Server		✓	✓
FTP Server		✓	✓
POP3/IMAP Email Server		✓	✓
WFW File Server			✓
NFS File Server			✓
IP Aliasing			✓
Packet Filter Firewall			✓
DNS Server			✓
ISP Remote Configure			✓
Price	\$269	\$1895	\$4995 base



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also needed to be able to share expensive peripherals such as tape drives, color printers, large hard disks, etc. I expect Aviator to be particularly attractive to laptop users, both interfacing to a wired network and "clusters" of laptops, such as a travelling sales force — get your laptops within 75 feet of each other and they're networked!

It's understandable that WebGear chose to release Aviator in a parallel port version first, but it seems to me that the very best way to connect Aviator to a PC is through a universal serial bus (USB) connection. I expect USB to quickly take over the PC world as the primary input/output interface to PCs, and Aviator as just another peripheral on a USB connection would work well — it would also enhance Aviator's plug and play capabilities.

WIRELESS DISCUSSION MAILING LIST

I've carried on extended discussions with readers about wireless networking topics. As I've noted previously, there doesn't seem to be much available on the Internet to discuss (non-amateur radio) wireless data topics. A mailing list seemed to be the natural way to extend these discussions to anyone who might wish to participate. So, I've set up the Wireless-Data Mailing List. To subscribe, send an e-mail message to: majordomo@mailinglist.net and in the body of the message (no subject needed): subscribe wireless-data.

I look forward to chatting with you on the Wireless Data Mailing List! ♦

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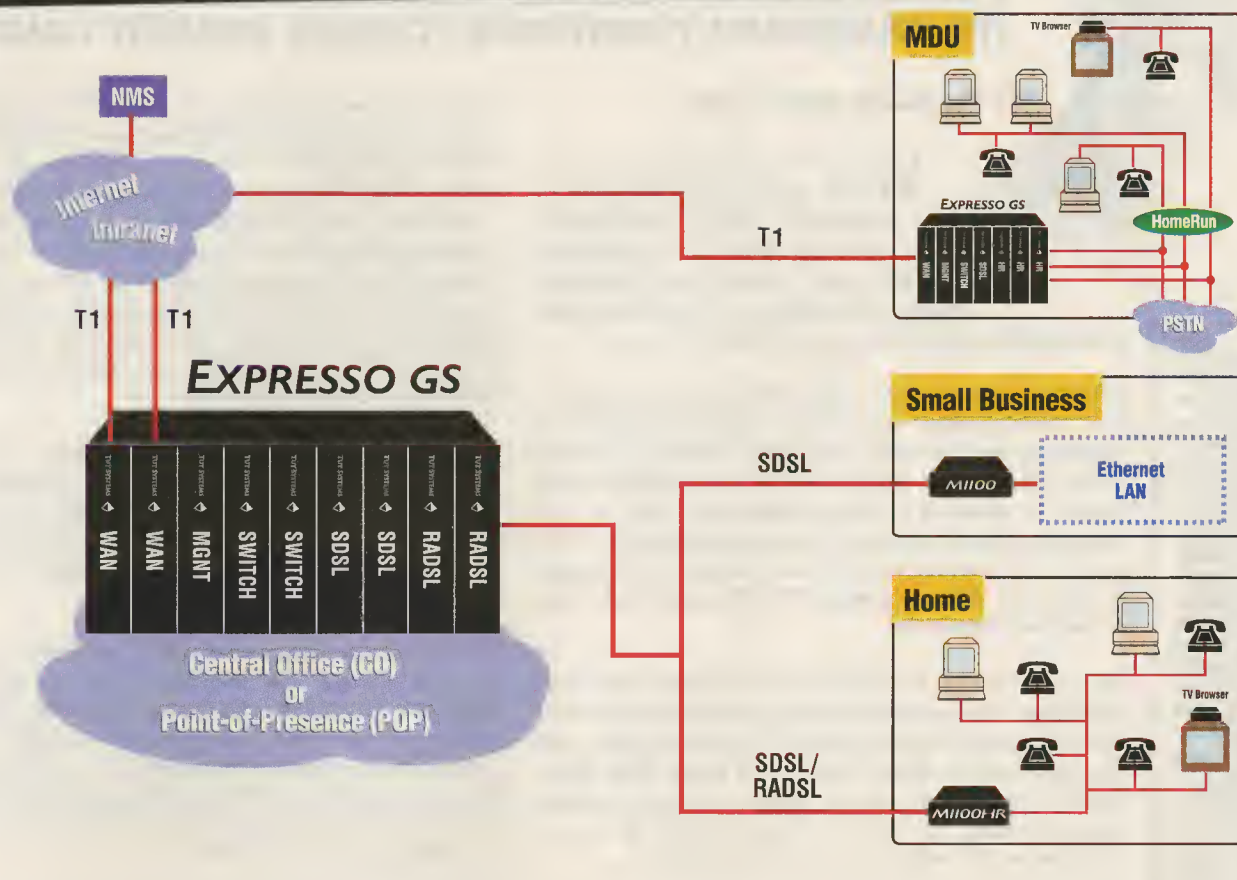


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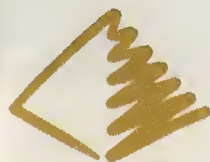
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PUTTING THE NET TO WORK by Durant Imboden

THE PASSWORD, FRONTPAGE FOIBLES, MEMORY LANE

The Password: Pass or fail?

With **The Password**, a new web service that launched in February, CMG Information Services may have introduced the most cynical web business model of the year — or the most wildly optimistic, depending on your point of view.

CMG, in case you don't remember, is an investment and development firm that owns PlanetDirect, AdSmart, and five other Internet-related companies. It's also the largest shareholder in both GeoCities and Lycos. In short, it probably knows as much as any company does about doing business on the Web — but even to an outsider who defines "stocks" as neckwear from Salem, Massachusetts, The Password looks like a lose-lose proposition.

The basic concept is simple: Build a search index that combines filtering and spidering technology with free labor by enthusiastic members. To put it another way, The Password is like a Yahoo! or a Lycos Web Guide staffed by unpaid users whose member-created subtopics flesh out the 350 topics already chosen by The Password's editors or bought by sponsors.

To get an insider's feel for The Password, I visited the site and tried creating my own member magazine. Here's how the process worked:

First, I registered and clicked on the "My own magazine!" link. I then selected a category ("Travel and International") and chose "cities" from a menu that listed "Cities," "Countries," and "Resources." Another click, and I was taken to a form with four cities listed: Boston, Chicago, New York, San Francisco. I couldn't enter my own city — only The Password's editors can create major topics, it seems — so I picked "New York" because I'd lived there in my distant youth.

The next screen listed more than a dozen New York topics, such as "World's Fairs," "Eating Out," and "Books and Guides." I selected "Historical Sites" and clicked OK. I was then ready to edit my magazine, using a menu that included items such as:

- Add new content
- Get more content from the Library
- Add web links
- Change existing content
- Organize Table of Contents



the password

This is where things began to get tricky. I selected the help document labeled "Editing your Magazine" and found eight pages of how-to information on selecting filters, using Boolean expressions, and activating the "WebRobot" and "FilterRobot" that would automatically retrieve and sort web sites based on my search criteria. The idea, apparently, is to set up a table of contents, then let the spider go out and retrieve appropriate web pages. The resulting outline and links can then be published as a "member magazine" at www.thepassword.com.

Does this sound like a lot of drudgery? It is. And there's absolutely no reward for the volunteer editor beyond the pride that comes with seeing his or her name above a page of web links. (In case you're wondering, I bailed out of my "personal magazine" when I saw how much work was involved.)

"So what's the business model?" you may be asking. In many ways, it's identical with the GeoCities approach: Give users the chance to publish their own material on the Web, then deliver the resulting sites (and content creators) to advertisers. And on the surface, it resembles The Mining Company by using hundreds (or ultimately thousands) of subject specialists to mine content on the Web.

Unfortunately, The Password appears to have two fatal weaknesses in comparison to www.geocities.com or www.miningco.com:

- 1) Geocities is the vanity press of the Web. Users can publish anything that isn't prohibited by the GeoCities user guidelines — from poetry magazines to travel diaries; from pet pages to recipe collections. The Password, in contrast, asks the user to become a library cataloguer within a rigid editorial structure.
- 2) The Mining Company is staffed by handpicked, trained "guides" who receive cash stipends and a share of the advertising revenues from their sites — unlike The Password, which lets anyone play web editor and keeps all the revenues.

Having said all this, I'll concede that The Password may be useful as a search tool; at least for sophisticated web users who have the time and energy to assemble their own private magazines for personal use. But it's hard to imagine many of those users wanting to create public content for The Password without getting paid.

Durant Imboden is a freelance writer whose credentials include published novels and nonfiction, fiction editing for *Playboy*, travel writing for corporate clients, and representing authors at a New York literary agency. He currently manages the Writing Forum on The Microsoft Network and co-authors the "Flame Wars" column on Delphi, where he is an editorial consultant. Durant maintains a web site for writers at <http://www.writing.org>. MailTo: imboden@writing.org

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FRONTPAGE 98 FOIBLES

I've been using the FrontPage web-authoring package since version 1.0, and I've always had a love-hate relationship with the program. On the one hand, it's easy to use, and it lets me write web pages without the distraction and eyestrain of HTML tags. But on the other hand, it has a maddening tendency to screw up my web pages in subtle and unpredictable ways.

After versions 1.0, 1.1, 2.0, 97, and now 98, you'd think the FrontPage developers would have ironed out the bugs. No such luck. Here are a few bugs or design flaws that I've discovered in a month of using Microsoft FrontPage 98:

The font/span flip-flop

Recently, I edited a large number of pages that were based on templates with Cascading Style Sheet tags. The body text looked fine in Netscape Navigator 4.0 (which ignores the CSS tags), but the font size varied from paragraph to paragraph in Internet Explorer 4.0.

I was mystified until Steve Pruitt, manager of MSN's Business Management Forum at <http://forums.msn.com/businessmanagement>, told me what was going on: FrontPage 98 was rearranging the order of my `<font=>` and `<span=>` tags at random, causing the paragraphs to display incorrectly in IE 4.0. The only answer was to edit the finished pages in a text editor or an HTML editor like HomeSite.

The misplaced target tag

After editing a number of pages with web links, I looked at the HTML code and discovered links that read:

```
<a target="mainbody" href="pagename.htm">
```

Oddly enough, the target tag was misplaced in only about a quarter of the links. At least I was able to fix the tags in the FrontPage HTML window rather than turn to a third-party application like HomeSite.

The lingering link

Want to change a link? Highlight it, use the hyperlink dialogue to change it, and click "OK." Is the new link saved? Maybe, maybe not. Better check the HTML window, because there's a good chance that FrontPage Editor left the link exactly the way it was.

The save 'n' swear syndrome

FrontPage Editor saves files reliably if they aren't part of a FrontPage Web. But if you're editing a page from a FrontPage Explorer Web, look out — you may get an "Unable to find whatsit at Port 80" message when you try to save the page.

I'm not sure why this error occurs, but it seems to happen after I'm online and the connection to my ISP gets dropped. Unfortunately, there's only one workaround: Use Edit/Save All

to highlight everything in the HTML window, then copy and paste the code into a text editor before closing FrontPage.

The transfigured table

Import text into a table, and FrontPage may change the table's settings without warning. I encountered this problem repeatedly when working with a third-party designer's templates that used tables to control the placement of text on a page. For example, a table that had a width of 100 percent suddenly took on a width of 672 pixels, and I didn't discover this until I viewed the finished page in a browser.

The workaround: Examine a table's width settings carefully after importing text, and don't be surprised if a large block of text (or even a long URL) has caused FrontPage 98's Dr. Jekyll to behave like Mr. Hyde.

WHEN I WAS A BOY IN 1994...

When I look at magazine features like "25 years ago in *Popular Mechanics*" or "50 years ago in *National Geographic*," I tell myself that we need a column titled "Three years ago in *Boardwatch*." It's sometimes hard to remember how much change we've seen in the world of BBSes, online services, and the Internet in the last few years.

Consider:

- The World Wide Web didn't go live until 1990.
- In January of 1993, there were only 50 HTTP Servers in the world. By October, 1993, there were still only 500.
- In 1994, AOL had fewer than 1,000,000 members.
- The World Wide Web's traffic didn't surpass FTP traffic (as measured in bytes) until April 1994.
- The major online services didn't offer web browsers or direct Internet connections until mid-1995.
- In 1995, Excite — then known as "Architext" — was a start up firm operated by six recent Stanford grads. Today it's the third most popular site on the Web.
- In January 1995, there were 71,000 Internet domains. By July 1997, the figure was 1,301,000.

For more Internet trivia, see Anthony Anderberg's History of the Internet and Web at www.dsu.edu/~anderbea/history or Hobbes' Internet Timeline at www.isoc.org/guest/zakon/Internet/History/HIT.html#1990s.

I can't resist quoting from "A Civilian Surfs the Internet," a sidebar to a review of online services in the August 1994 issue of *PC World*:

"Surf the net. It's the mantra du jour of the cyber masses. Flip on your TV, pick up any newspaper, or scan your radio dial, and you're bound to catch someone waxing poetic on the wonders of surfing the Internet's virtual waves. There's just one catch: Unless you're comfortable with arcane UNIX commands and



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indecipherable addresses, the Internet is a tough ride. Or, rather, *was* a tough ride. The past tense is due to Mosaic, the hip new tool of nerds in the know."

The article describes the Web of four years ago:

"Mosaic's links can take you to the Netherlands, Germany, England, Hong Kong, Japan, South America....one 19-year-old at the University of Maryland — every bit a sophomore — offers a photo and short bio of himself." The author adds: "The list of potentially valuable web resources would run thousands of pages."

Thousands of pages? Today, I can get a *hit list* running to thousands of pages if I search on "sex," "God," or "Bill Gates" in AltaVista. So don't throw away those old issues of *Boardwatch*! You'll need them to refresh your memory when, in the year 2000, your kid asks, "Daddy [or Mommy], what did you do in the browser wars?"

Do you have an Internet-related product, service, or success story that might be appropriate for *Boardwatch Magazine's* "Putting the Net to Work" column? If so, MailTo:imbooden@writing.org. ♦

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CONSUMMATE WINSOCK APPS by Forrest Stroud

THE END OF THE BROWSER WARS

With Netscape finally wising up to the fact that it had to follow Microsoft's lead of giving away its browser, the browser wars have undergone a dramatic turn of events. And in the midst of making its Navigator and Communicator software freeware, Netscape also claimed that the browser wars were finally over — another indicator of the changing browser scene.

The change in pricing philosophy is a good sign, but the latter claim is reason for us all to worry. Not too long ago, Netscape dominated the browser market with an 80 to 90 percent market share. Today some surveys report that Netscape's share has dwindled to less than 50 percent as Internet Explorer's popularity continues to skyrocket. The future of the company itself has become a hot topic as well. Regardless of whether you're an Internet Explorer fan or a Netscape advocate, the possibility of an end to the browser wars is definitely not a good sign.

We as users need there to be a competitive rivalry between the two companies so that each browser continues to get better — i.e. more features, better performance, fewer bugs, and all at the same low cost. Take away one of the browsers and there's no real competition left for the surviving one, which means there's also not as much incentive left for the remaining browser to continue to be improved — or to be given away for free.

I'm hoping that Netscape wasn't forewarning us of events to come but was instead trying to state in a convoluted way that because its browser is now free, Internet Explorer doesn't have any advantages left over Netscape — making Communicator the undisputed browser champ. If that's the case, we should all be relieved, even though Netscape isn't quite correct in asserting that Communicator is better than IE in every area. Whatever Netscape meant by this announcement, all I can say is that this is one war we should definitely *not* want to have end anytime soon.

MICROSOFT OUTLOOK 98

This combination personal information manager (PIM), scheduler, news reader, and e-mail client was first introduced with Office 97 as a replacement for the rather anemic Schedule+ app included in earlier versions of the Microsoft Office suite. The second generation release of Outlook is now available on the Web in stand-alone format as Outlook 98. The new version adds a variety of powerful features to an app that already sported an impressive feature set. One of the most important additions is complete support for the

Microsoft Outlook 98



Desc:	The latest release of Microsoft's professional PIM/e-mail client
Pros:	Outstanding PIM, e-mail, and calendar functions; excellent feature set; advanced filtering capabilities
Cons:	Relatively slow and bulky, Outlook Express is faster and better optimized for Internet e-mail
Location:	http://mssjus.www.conxion.com/msdo/wload/outlook/98/b2/en/Setup.exe
Status:	Free beta release - expires May 1, 1998
Platforms:	Windows 95/NT
Company:	Microsoft Corporation:
Web Site:	http://www.microsoft.com/outlook/outlook98/default.htm

latest Internet mail standards including POP3/SMTP, IMAP4, HTML mail (send and receive e-mail in

HTML format), LDAP, S/MIME (for secure mail — with optional 128-bit enhanced security), vCard, vCalendar, and iCalendar. Outlook 98 has also been optimized for LAN workgroup use — Outlook performs the client role while working in tandem with an Exchange Server to provide advanced e-mail, calendar, and collaboration features for each user.

Outlook 98 also features the ability to automatically import your connection settings, e-mail messages, and address books using your existing Outlook 97, Netscape Communicator, Eudora, or Outlook Express clients. This quite effectively eliminates the hassle of setting up Outlook as long as you're a current user of one of the above applications (Pegasus Mail and similar users are out of luck for now). Outlook also offers the same functions for the personal information manager aspect of Outlook 98 by importing and exporting information between Outlook and the following popular PIMs — ACT, Ecco, Sidekick, Lotus Organizer, and Schedule+. Outlook Today is another cool addition. This feature gives you a snapshot view of all of your important information for the current day's events. The Outlook Today screen presents a concise listing of your appointments, daily tasks, and e-mail messages with quick access to the contact manager and additional Outlook information.

In addition to its e-mail capabilities, appointments and events calendar, contact manager, and task manager, Outlook 98 also offers a notes feature (the electronic version of those little yellow sticky notes) and a

The applications reviewed here and many more are available at Stroud's Consummate Winsock Apps List, www.stroud.com and <http://cws.internet.com>.

Forrest Stroud currently works in College Station, Texas, as a web developer for Mecklermedia Corporation. He recently graduated, with honors, from The University of Texas at Austin. The Information Systems and Data Communications Management major enjoys spending what little free time he has with his wife Joanne and the "zoo" — an ever-expanding collection of dogs and cats that currently consists of a Dalmatian pup (Svoda Pop), a chocolate Lab cross (Roemer), a German Shepherd pup (Marius), and a pair of rascally kittens (Odie Pez and Bo Miggy). Animal lovers can check out pictures of the pets on Stroud's home page at <http://home.sprynet.com/sprynet/neuroses>

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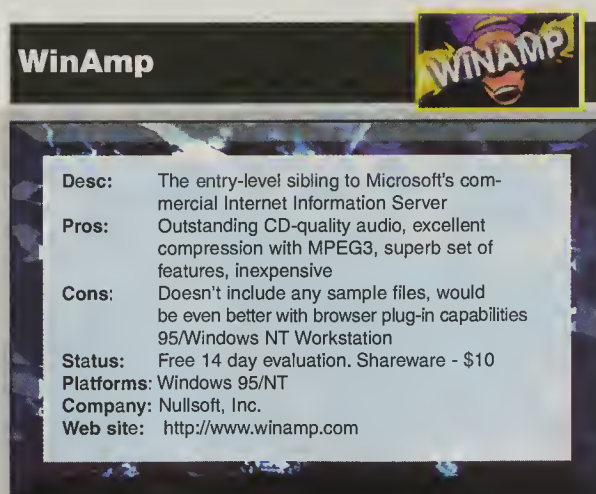


built-in Journal that tracks Office documents and e-mail messages that you send to, and receive from, other contacts. The Outlook Journal makes it possible to quickly and effortlessly find every document and e-mail conversation that you've had with another person or group of people. The one client Outlook 98 doesn't include as an integrated function is an online newsreader; instead, it shares the newsreader built into Outlook Express. While the Outlook Express news client compares favorably with the competition, the fact that it isn't integrated into the Outlook 98 interface will be a drawback for users looking for the tight integration of a package like Netscape Communicator or the stand-alone agent mail and news client.

While Microsoft has made Outlook into one of the best PIM/e-mail products currently available, it's not the perfect choice for everyone. Outlook 98's biggest competition might not come from an outside product but instead from its younger sibling, Outlook Express. Outlook Express retains nearly all of Outlook's e-mail features and enjoys performance benefits that result from not being bulked down by all of Outlook's additional components. The only major feature given up by Outlook Express is Outlook 98's Rules Wizard. This wizard is the most advanced e-mail filtering system available and is a must-have for anyone who works with multiple-level mail filters. Outlook Express' filtering system (the Inbox Assistant) is impressive in its own right but it simply can't match Outlook 98's Rules Wizard when it comes to developing complex mail filters. The Rules Wizard presents an additional benefit in that it can help you identify and eliminate junk e-mail (spam). Another feature not shared by Outlook Express is Outlook 98's ability to create and send fax messages through a downloadable plug-in.

Outlook Express is targeted more toward home and small-business users who primarily access their e-mail and newsgroup feeds through dial-up Internet connections. As a result, Outlook Express lives up to its name, especially when compared to its bigger, bulkier brother, Express is optimized for Internet mail and news functions and as a result enjoys an edge in performance in every e-mail area shared by the two clients. Outlook, on the other hand, excels at combining workgroup mail access with advanced Internet mail capabilities. It also offers one of the best PIM packages around. While stand-alone PIMs like Ecco, Time and Chaos excel over Outlook in some areas, neither can match Outlook's comprehensive set of features. Outlook 98 widens the gap even further with its new and improved features, a revised interface (including built-in AutoPreview and three-pane Preview displays), and a multitude of powerful functions. Whether you're looking for an advanced e-mail client or a PIM that can help you juggle all of your demands, Outlook 98 is bound to satisfy.

The newest rage in Net audio right now is the MPEG Audio Layer 3 stream technology (MPEG3 or even MP3 for short). This is the latest official MPEG standard to be released from the ISO/IEC standardization body (MPEG4 is in the works) and is by far the most powerful member of the family. MPEG3 uses a combination of extremely complex methods to attain high compression ratios while preserving CD-quality audio. While it might not sound overwhelmingly impressive at first glance, when you take into account that without compression it takes approximately 175 Kilobytes to store just *one second* of CD-quality stereo sound, the full benefits of MPEG3 and the older MPEG standards quickly become apparent.



WinAmp

Desc: The entry-level sibling to Microsoft's commercial Internet Information Server

Pros: Outstanding CD-quality audio, excellent compression with MPEG3, superb set of features, inexpensive

Cons: Doesn't include any sample files, would be even better with browser plug-in capabilities

Status: Free 14 day evaluation. Shareware - \$10

Platforms: Windows 95/NT

Company: Nullsoft, Inc.

Web site: <http://www.winamp.com>

Audio files encoded with MPEG3 can have their original sound data compressed by a factor of 12 without noticeable degradation in sound quality. As with any "lossy" compression scheme there is some degeneration in quality with MPEG3, but in this case the loss is unnoticeable to the human ears. Without getting too technological, the effects of MPEG3 are made possible by "perceptual coding" techniques that address the perception of sound waves by the human ear. Even though some information has been lost through the compression process, you won't be able to notice it upon playback. The result is high-quality stereo audio that sounds as good on your computer as it would on your CD player, and all without the need for a 20-gigabyte hard drive.

There are at least 20 MPEG3 audio players currently available. While some offer better performance (like AudioActive) or are less expensive (like the freeware WinPlay3), none of the players comes anywhere close to matching the multitude of features, ease of use, and overall functionality of WinAmp. At only \$10, this shareware app plays Layer 2 MPEG audio streams as well as the newer Layer 3. While less intensive users might be able to get by with a basic MPEG3 player like WinPlay3, those audiophiles out there who need quite a bit more out of their players will appreciate the abundance of features in WinAmp that you won't find elsewhere. And believe me, even if you've never been that interested in music, once you experience the full range of capabilities offered by MPEG3 and WinAmp, you'll quickly find yourself becoming an audiophile.

WinAmp's exclusive audio features range from basic capabilities like fast forward and rewind functions, repeat and shuffle options, an intuitive interface, and Windows traybar support to more advanced features like a 10-band graphical equalizer with preamp, user definable presets (with automatic memory options), a full-featured playlist editor, and built-in visualization tools. When using the visualization tools you have the option of "watching" your music with an oscilloscope (a device that displays your music in wave patterns similar to the oscillation of an electrical current) or the visually stimulating spectrum analyzer (displays your music in a graphical spectrum of colorized bands).

The built-in visualization capabilities of WinAmp are impressive by themselves, but if you want to go a level beyond and watch your music really dance, WinAmp's support for plug-ins is the key to your dreams. Over 20 different visualization plug-ins are currently available; of these Krunoslav Pisacic's

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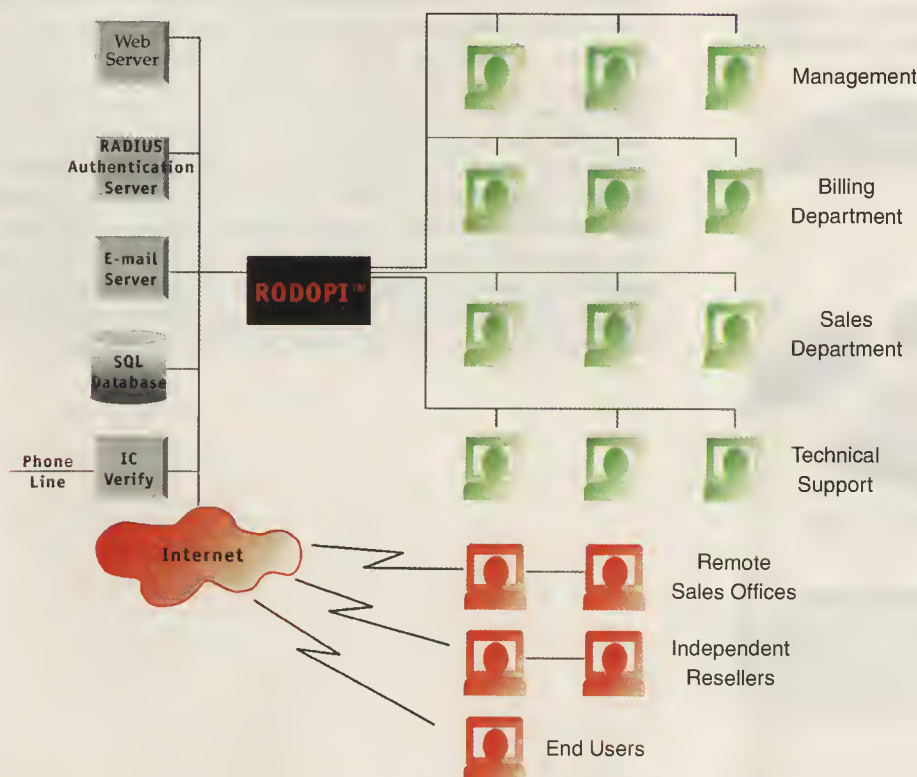
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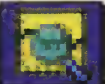
Cthugha for WinAmp, Henrik Drewelow's HD Analyzer, Ced's 3D Wavelet, and NullSoft's FullScreen Visualization are highly recommended downloads. The plug-ins are updated regularly, so be sure to check WinAmp's Plug-ins Page (www.winamp.com/plugins.html) for the latest releases. Whether you decide to go with the built-in visualization tools or one of the many plug-ins, WinAmp offers some serious "candy for the eyes" to go along with its excellent audio capabilities.

The only real downside to WinAmp is that the client doesn't include any audio files of its own. This wouldn't be a big drawback except for the fact that MPEG3 files are still relatively difficult to find on the net. If you do have trouble finding sample MPEG3 files to try out, you'll definitely want to check out MPEG3.com's MPEG3 Site List (www.mpeg3.com/sitelist), MP3.com (www.mp3.com), the Nordic Downloadable Music Site (NDMS at www.nordicdms.com), and my personal favorite, the Smashing Pumpkins Audio Archive (www.starla.org/spaa). Someday soon we'll probably all be buying our CDs and sound files over the Net and listening to them using MPEG3 and WinAmp — the technology is that good. If you haven't tried out WinAmp yet, you really don't know what you're missing. This amazing technology is simply too wild to describe in words — so wild in fact that you'll just have to try it out for yourself.

PERSONAL STOCK MONITOR 2.5

Personal Stock Monitor is designed to make simple the routine and often time-consuming chore of tracking stocks. It offers many of the best features found in the competition and at the same time presents an array of goodies that you won't find in

Personal Stock Monitor 2.5



Desc:	Another solid app that offers free (time-delayed) stock quotes on the Net
Pros:	Easy and efficient app for delivering free stock quotes straight to your desktop, impressive feature set
Cons:	Free quotes are delayed by at least 15 minutes, lacks a few features found in the competition
Location:	http://www.clark.net/pub/aivasyuk/psm/psm25.exe
Status:	Free 30 day evaluation. Shareware - \$25
Platforms:	Windows 95/NT
Author:	Anatoly Ivasyuk
Web site:	http://www.personaltools.com/psm

most of the other stock clients. Personal Stock Monitor features include the ability to choose from among 13 free (time-delayed) stock servers (PC Quote, Quote.Com, NetWorth Security APL, CNN Financial Network, Canada Stockwatch, StockCenter, and seven more), as well as three subscription-based (real-time) quote servers (Datek, E*Trade, and PC Quote's MarketSmart), export functionality (for Quicken, MetaStock, and CompuServe's QuoteLink), dynamically updated stock performance graphs, configurable update intervals, mutual fund monitoring, full dial-up networking support, multiple concurrent connections, proxy support, price alerts, stock printing capabilities, and more. Information offered for each stock includes daily and yearly high/low prices, current price, daily percentage change, volume traded, and the time the stock was last updated.

Like all other stock ticker clients on the Net, the stock information posted by Personal Stock Monitor is always delayed by at least 15 minutes (unless you use one of the fee-based real-time quote servers). Features recently added to an already impressive set, include stock ticker searching, a new ticker bar with configurable scrolling, support for several international exchanges (Canadian, Swiss, London, Paris, and Frankfurt exchanges), a traybar agent, advanced portfolio management capabilities, and an entirely new user interface. Personal Stock Monitor is only available as a 32-bit client, but versions earlier than the 2.5 release will run on Windows 3.x platforms with the latest version of Win32s (v2.5 runs only on Windows 95/NT platforms). While Personal Stock Monitor still lacks a few important features like WinStock's enhanced browsing capabilities and automatic foreign currency conversion, at only \$25, Personal Stock Monitor is a great stock ticker client that packs a lot of power into an inexpensive package. ♦

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TUCOWS

Scott Swedorski

MANAGING ALL THE NEW FILES

New record surpasses 10 billion bits per square inch. Scientists at IBM have doubled their own world record in hard disk data-storage density, surpassing the 10-billion-bit per square inch data-density milestone just one year after they set their last mark.

"With this laboratory demonstration, we're on track to providing products with 10-gigabit density by the year 2001," said Robert Scranton, IBM Storage Systems Division vice president for technology.

At the new record density (11.6 billion bits, or gigabits, per square inch or 1.8 billion bits per square centimeter), every square inch of disk space could hold 1,450 average-sized novels or more than 725,000 pages of double-spaced typewritten pages, which would make a stack taller than an 18-story building.

Since 1991, when IBM introduced the industry's first magnetoresistive (MR) sensor for reading data on hard disks, data density has increased an astounding 60 percent a year. Over the past six years, the average data-storage capacity of disk drives sold worldwide has increased 18-fold, while the price per megabyte of such capacity has dropped 52-fold.

That's a lot more storage space. I have a theory about hard drive space though — that the amount of interesting stuff to download immediately expands to fill the additional available space in every new hardware upgrade.

Add/Remove Cleaner cleans out old items from the Add/Remove Programs list. It deletes items that are out of date or unwanted. Add/Remove Cleaner is very handy if you delete something by accident without realizing there was an uninstall available.

Add/Remove Cleaner

Version Number:	1.4
Revision Date:	December 13, 1997
File Name:	Addrmclr.exe
Byte Size:	256,499
License:	Freeware
Home page:	http://www.distortions.com/software/addrmclr.htm
NT Compatible:	No

PowerToys Complete Set is a full collection of Microsoft's shell add-ons for Windows 95. These include:

- Desktop Menu — Opens items on your desktop from a convenient menu on the taskbar.
- CabView — Treats .CAB files like folders — look inside, then drag files in and out with ease.
- Contents Menu — Gets to your files without even opening their folders.
- Shortcut Target Menu 1.2 — Gets the proper ties for a shortcut's target just by right-clicking the shortcut.

Microsoft PowerToys Complete Set

Version Number:	12-1 Release
Revision Date:	December 1, 1996
File Name:	powertoy.exe
Byte Size:	209,241
License:	Freeware
Homepage:	http://www.microsoft.com/windows95/info/powertoys.htm
NT Compatible:	Not all Powertoys work in NT, but some do.

FindX

Version Number:	1.2
Revision Date:	September 11, 1996
File Name:	findx.exe
Byte Size:	14,790
License:	Freeware
Home page:	http://www.microsoft.com/windows95/info/powertoys.htm
NT Compatible:	Yes

FindX allows you to add your own custom commands to the Find menu. FindX comes with a few built-in commands to help get you started. This search enhancement helps speed up finding that one file amid hundreds on your hard drives.

Turbo Browser 98 is a fully featured file manager replacement that lets you preview graphics and

Turbo Browser 98

Version Number:	6.01.80103
Revision Date:	January 3, 1998
File Name:	tb98enta.exe
Byte Size:	1,444,936
License:	Demo
Home page:	http://www.turbobrowser.com
NT Compatible:	Yes

Scott Swedorski is president and founder of TUCOWS, The Ultimate Collection of Winsock Software.

He lives in Flint, Michigan with his wife, Vicky and two daughters, Emily and Ashley. After joining the army at the tender age of 17, Scott received his degree in Computer Information Systems from Mott College, and received an Honorable Discharge after eight years service. Scott welcomes input from Internet users and software developers at tucows@tucows.com.

ISP BUSINESS STATUS

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Co-location Server

sound files instantly, from multimedia, ActiveX, ActiveMovie, and Office97. It even helps clean out your web browser's cache. It can be used as an alternative (local) browser to allow you to preview HTML pages that you've saved.

Win Hacker 95 is the best utility available to configure hidden Windows 95 settings. Some of the features include:

- The ability to rename or change the icon of any shell folder (such as My Computer, Recycle Bin).
- Add/Remove specific shell folders from My Computer or the Desktop.
- Show Windows bitmaps as thumbnails in Explore.

Win Hacker 95

Version Number:	2.02
Revision Date:	September 29, 1997
File Name:	wh95v202.exe
Byte Size:	1,156,539
License:	Shareware
Home page:	http://www.wedgesoftware.com
NT Compatible:	Yes



AxMan will split large files into pieces for any purpose you may have. It will split files so that they will fit onto floppy disks, or it can split them to fixed sizes that the user determines. When you need to run the file, AxMan will restore it for you.

AxMan

Version Number:	2.12
Revision Date:	November 4, 1997
File Name:	axman212r.zip
Byte Size:	1,260,384
License:	Shareware
Home page:	http://www.wwnet.com/~dfend/axman.html
NT Compatible:	Yes



MAC PICKS

With **DiskTracker**, you can quickly and easily create a catalog of every file on every one of your floppy disks, hard drives, CD-ROMs, optical drives, servers, Zip drives and other removable media

DiskTracker

Version Number:	1.1.2
Revision Date:	May 1, 1997
File Name:	disk-tracker-112.hqx
Byte Size:	834,893
License:	Shareware
Home page:	http://woland.mit.edu/dt



File Buddy is a good general utility for working with files and folders. It can obtain and set a wide range of file and folder information such as type and creator, set invisibility and more.

File Buddy

Version Number:	4.3.1
Revision Date:	December 25, 1997
File Name:	tucows_filebuddy.hqx
Byte Size:	902,915
License:	Shareware
Home page:	http://www.skytag.com



TurboFind is a really fast search program that can search a folder or your whole disk.

TurboFind

Version Number:	2.2.2
Revision Date:	February 1, 1997
File Name:	TurboFind222.hqx
Byte Size:	372,151
License:	Shareware
Home page:	http://www.accinform.com



PILOT PICK

Palm-Searcher is a fast and useful program to search for a string in the Palm Pilot Memo or Address database. You can predefine five function buttons to make the search easier. Combination-Search (AND-Function) is also available. An older version of this program was called Memo-Searcher, but without the address-search mode.

Palm Searcher

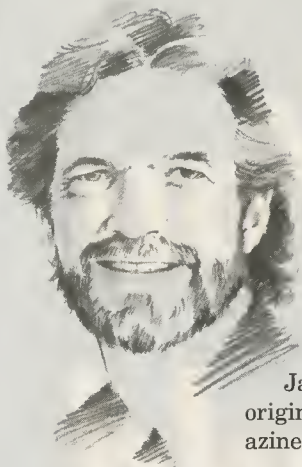
Version Number:	1.5
Revision Date:	November 4, 1997
File Name:	palmsearcher.zip
Byte Size:	5,798
License:	Shareware



These kinds of utilities are handy add-ons to the existing tools on your systems. No matter what operating system you use, you probably have not explored it completely. Check with the local help files to see if your new utilities are really necessary — or if they are merely just new ways of doing an existing job. Don't be afraid to experiment, though — sometimes a small change in functionality can make all the difference between a Three-Cow-wanna-bee and a Five-Cow-winner! ♦

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MANNING THE WIRES

by Ric Manning

DRUDGE'S WEB SCANDAL SHEET UPSTAGES THE WASHINGTON PRESS

If you were watching the latest White House scandal unfold on national television in January, you might have thought that the story originated with *The Washington Post*, *Newsweek* magazine or one of the big TV networks.

But the first report that President Clinton may have had an affair with a White House intern didn't come from the usual media heavyweights. Rather, it came from a 31-year-old writer who publishes his online gossip sheet from his Hollywood apartment.

Matt Drudge is no Woodward or Bernstein. He never went to college and never had a job in the mainstream press. The closest he ever came to a conventional journalism job was when he worked in the CBS gift shop.

Yet almost overnight, Drudge became the hottest reporter chasing the nation's hottest story. At the same time, he swept away any lingering doubts about the power of the Internet as a major news medium.

During the height of the media feeding frenzy, Drudge was being invited to join the political roundtables on Sunday TV shows while the server that hosts his web site (www.drudgereport.com) was straining under a crush of traffic.

Drudge's initial report on the scandal was short on details and didn't even name Monica Lewinsky, the young intern who is suspected of having sexual relations with Clinton in the White House. What Drudge said in his report on the Web and on America Online was that *Newsweek* reporter Michael Isikoff had nailed the story but that *Newsweek* editors were unwilling to print it.

A year ago Drudge might have been dismissed as another Internet crackpot. But this time, he touched off a mad scramble for the story that played out on the computer networks before it reached the newspaper front pages or the evening newscasts.

The first of the major news organizations to pick up the story was the *Post*, which published its report first on its web site. And when *Newsweek* finally unloaded the story, it published first in its electronic edition on AOL.

By midweek, Drudge had become a topic in the daily briefing sessions by White House spokesman Mike McCurry, who denied that administration employees had been forbidden to log on to Drudge's site.

"It's a free country," McCurry told ABC's Sam Donaldson. "People can do what they want to on the Internet."

Indeed they do. Drudge, for instance, has used a simple web site to vault into the national media spotlight. The site is mostly a plain-text collection of links to other news sources, including newspaper and broadcasters in America and Europe. Much of what Drudge himself reports comes from his daily perusal of what the mainstream media has to say.

But he often spices his reports with tips and gossip, some of which arrives by e-mail. Drudge is credited with several scoops from the entertainment world, including the plot of the next *Jurassic Park* film and last year's news that the cast of *Seinfeld* would return for another season if they were paid \$600,000 per episode.

The Lewinsky story wasn't the first *Drudge Report* that caught the attention of the White House and the Washington press corps. Last summer Drudge reported that *Newsweek* was also holding an Isikoff story that Clinton had made advances to another former White House aide.

Drudge doesn't always hit his target. In 1996, he predicted that Hillary Clinton would be indicted before the Democratic National Convention. And when he reported White House adviser Sidney Blumenthal had abused his wife, Blumenthal hit Drudge with a \$30 million libel suit. Drudge later retracted the story.

DRUDGE REPORT

The White House would paint Drudge as one more voice from the right-wing fringe, a Clinton-hater who uses his web site to further his own agenda. And Drudge acknowledges that his politics are conservative, but he says he's more interested in beating the mainstream press than in beating the drums of a particular ideology.

"The Washington press corps was sleeping," Drudge told the *Detroit News*. "and some kid in Hollywood broke the story."

"I've maintained that the White House is uncomfortable with independent reporting," he said. "I think the Internet's going to lead the way in reporting this story."

Ric Manning is a columnist and web master for *The Courier-Journal* in Louisville, Kentucky. His weekly column covers computers, consumer electronics and the Internet and is distributed to more than 100 newspapers by the Gannett News Service. It's also available on the World Wide Web at <http://courier-journal.com/gizweb>.

Ric was the founding editor of *Plumb* and *Bulletin Board Systems*, two newsletters that covered the BBS arena in the early 1980s. His freelance work has appeared in several magazines including *PC/Computing*, *Mobile Office*, *PC Week* and *Home Office Computing*.

Ric lives in Southern Indiana with his wife, two children and two Weimaraner dogs.

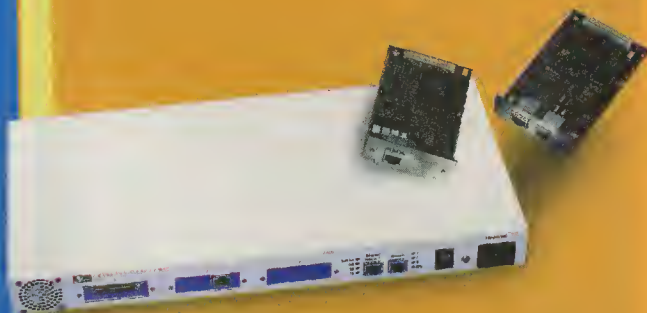
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To Daniel Weitzner, deputy director of the Center for Democracy and Technology in Washington, the fact that the Lewinsky story bubbled up from the Internet "shows the tremendous power of the Net as a means of upsetting the traditional media structure."

"The traditional, heavily edited media is really being challenged by the ease of publication that the Internet offers," he said. "The challenge for our culture is to figure out how to sort through the explosion of new journalism."

SUBSCRIPTION FEES REVIVED

After several high-visibility failures, most web publications abandoned the idea of charging subscription fees years ago. USA Today pulled the plug on its \$15-per-month plan shortly after it was launched. Microsoft's *Slate* backed away more than once from its announced plans to institute a subscription fee.

The only big-time publication that appeared to have the fortitude to charge for online content was *The Wall Street Journal*. Yet when the *Journal* went from free to fee last year, its subscriber list dropped from 300,000 to about 40,000.

Yet the number of readers willing to pay for *Journal* content increased steadily throughout 1997 and now other online publications are willing to risk charging for access.

Once again, *Slate* says it plans to impose a subscription fee. Microsoft's web magazine (www.slate.com), which claims 140,000 monthly readers, said the fee would be imposed sometime in early 1998. The amount had not been determined at the time of the announcement.

To Daniel Weitzner, deputy director of the Center for Democracy and Technology in Washington, the fact that the Lewinsky story bubbled up from the Internet "shows the tremendous power of the Net as a means of upsetting the traditional media structure."

Money magazine, which publishes online under Time Warner's Pathfinder umbrella, makes much of its content available for free but charges for access to Money.com Plus, a collection of specialized content such as investment reports and newsletters.

More web-based newspapers are also starting to charge a fee for access to some of their content. In December, the *New York Times* started testing paid access to its archives. Users can search a week of

news reports plus some sections for free. Under the test plan, users can search a year's worth of news stories for free, then pay \$2.50 to display the full text of the story.

The *San Jose Mercury News* and other Knight-Ridder papers allow seven-day searches for free but charge \$1 per story to display older stories. The *Los Angeles Times* charges \$1.50 for archived stories. The *San Francisco Examiner* and *Chronicle* are among the few papers that offer free access to archived stories. ♦

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The PowerRack also has the standard feature list: dial-in/dial-out access, a powerful RISC CPU, Ethernet connectors, ISDN capability, PPP, SLIP, CSLIP, *bootp*, *rlogin*, *telnet*, reverse *telnet*, PAP/CHAP authentication, RADIUS II, RIP II, SNMP MIB II, subnet routing, IPCP DNS exts. for Windows 95, and IP filtering.

PowerRack user and Internet Service Provider Michael Behrens, of InterNet Kingston (mbehrens@kingston.net), commented, "The PowerRack is an attractive product, both in its ability to do the job well and to do the job... cost effectively. Port for port costs are significantly lower than the Livingston Portmaster. The product lives up to its name... performance under load is exceptional! The PowerRack also offers a significant feature for feature comparison against the available competition (i.e. Livingston Portmaster). And, technical support was extremely knowledgeable and responsive."



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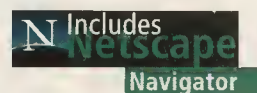
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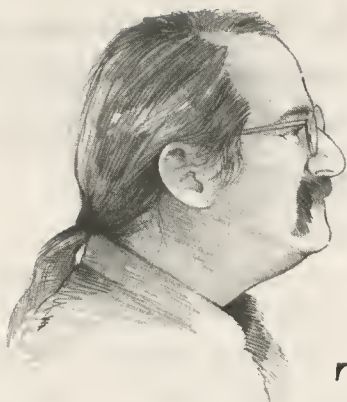
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ISP MATING RITUALS by Bill McCarthy

LEVEL 3: I LOVE YOU, PKS, BUT WE SHOULD SEE OTHER PEOPLE

They say that breaking up is hard to do, but sometimes it is for the best. For Level 3 that appears to be the case as the company is taking the kids and running off to an Internet commune in another state. But this appears to be a divorce without any midlife crisis whining and even the IRS seems to be sympathetic toward the breakup with Peter Kiewit Sons', Inc. (PKS).

The Internal Revenue Service ruled in March that the proposed stock exchange in the divorce settlement of PKS and its subsidiary, now known as Level 3 Communications, Inc., will be free of U. S. federal income tax for stockholders and the company. The company was also to receive an opinion from its tax attorneys that the proposed distribution of Class R Stock by the company to Class C stockholders will be tax-free. All of this was expected to be wrapped up by March 31.

Peter Kiewit Sons', Inc. is a construction giant operating throughout North America with interests in the telecommunications, mining, and energy industries as well as construction. Corporate headquarters are in Omaha, Nebraska. But Level 3 is running away to what is becoming an Internet and communications industry commune in the Rockies. Reuters reported in early March that the newest hot spot for Internet companies is Denver, Colorado, and Level 3 has joined that movement.

The area has been a home to major players in the cable television and telecommunications industries. Recently, however, the Front Range of Colorado, as the eastern side of the mountains is known, has been pulling in Internet industry notables and start-ups allegedly because of the availability of a skilled technology work force, manageable living expenses and outdoors recreation as well as Colorado's central geographic location.

Level 3 (www.L3.com) is building a \$3 billion fiber optic network across the U.S. based on Internet protocol technology. When it begins to operate the network, Level 3 will focus on the business market using its network to provide a range of communications services that includes local, long distance and data transmission as well as Internet access services.

The company acquired 46 acres in the Interlocken office park in Broomfield, between Denver and Boulder, to build a campus that is expected to grow to

over 500,000 square feet of office space. Level 3 expects to relocate a small group of executives and their staffs (the kids) from Omaha to Denver in temporary office space while its headquarters are built. A larger group (the prodigals) will also be moving from the Chicago area. The majority of employee growth, however, will come from new employees. About 2,000 employees should be hired by year's end, and about 4,000 within the next few years.

Broomfield Mayor Bill Berens said the construction project alone represents about a \$70 million investment in his community.

The company's neighbors in the office park will include Sun Microsystems Inc., which is building the headquarters of its SunService division. SunService is running away from Milpitas, California, to the Rocky Mountain Internet Commune.

James Q. Crowe, president and chief executive officer of Level 3, said: "It's fair to say that our potential employees led us to Denver. The surveys cited the lifestyle, natural beauty, climate and opportunities for employees to continue their technical education among the attributes of Denver. These attributes are especially attractive to a company such as ours that intends to grow by attracting talented individuals not only from Denver but across the nation." Funny, but the view from Littleton, southwest of Denver, has always seemed like we were looking at the industrial undercarriage of the Internet.

One subsidiary of Level 3 is PKS Information Services (PKSIS), which assists corporations in updating and structuring their systems to take advantage of Internet technology. Level 3 hopes that provides a ready-made base of corporate customers to move to Level 3's Internet-based network. PKSIS also provides computer outsourcing and systems integration services to business customers, and employs about 1,000.

Level 3 sprung from Kiewit Diversified Group (KDG), a subsidiary of PKS in January. The new identity reflects the change in the company's focus from investments in a range of industries to a concentration on business information and communications services. The change really began last summer, however, with the hiring of several former MFS Communications Company, Inc. executives, including Crowe, R. Douglas Bradbury, executive vice president and chief financial officer and Kevin J. O'Hara, exec-

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with
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firehunter

The management challenges that face the ISP environment are anything but minor. And as competition heats up, it's only going to get more intense. Fortunately, there's HP OpenView Firehunter.

Firehunter is an intelligent, out-of-the-box solution built specifically for Internet Service Providers. It's an Internet service management solution that delivers the right information to the right people quickly and easily. And it will ignite the quality of your Internet services and ultimately spark higher degrees of operational efficiency.

With Firehunter, *Operations* can troubleshoot Internet service problems quickly. *Customer Service* can deliver the quality service that minimizes costs and improves your customer's satisfaction. And *Planners* can use existing resources more efficiently—and perform capacity planning more accurately—using flexible reporting capabilities. What's it all add up to? The kind of business growth that sets your organization on fire. HP Firehunter. It's hot. It's new. And it's only from Hewlett-Packard. Use it and blaze your way to success.

HP OPENVIEW FIREHUNTER

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HP OPENVIEW

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utive vice president of operations. PKS' stockholders approved the reorganization in December.

As part of shift in business focus, Level 3 sold its common stock of CalEnergy, Inc. and direct ownership interests in energy projects jointly held by both companies. The sale of assets to CalEnergy resulted in before tax proceeds of about \$1.2 billion. So who says breaking up is hard to do?

QWEST AND LCI ANNOUNCE \$4.4 BILLION ENGAGEMENT

Speaking of the Internet Commune in the Rockies, Qwest Communications International, Inc. of Denver and LCI International, Inc. of McLean, Virginia, announced March 9 that they will merge. The merger will create the fourth-largest U.S. long-distance company, if the WorldCom-MCI merger goes through.



The all-stock transaction is valued at about \$4.4 billion. The merger enables the LCI customers access to the Qwest Macro Capacity fiber network and allows Qwest to take advantage of LCI's sales and marketing people, distribution channels, intelligent network platform, as well as the company's customer care and billing system. The combined companies had 1997 revenues of \$2.3 billion, serve over two million business and residential customers and have a total current equity market capitalization of over \$11 billion.

The board of directors of each company approved the merger. The terms of the agreement call for each LCI share to be converted into \$42 of Qwest common stock, under current market conditions. Based on the closing prices of Qwest and LCI on March 6, 1998, LCI shareholders would receive about 122.4 million newly issued shares of Qwest stock, or 36.4 percent of the combined company's shares. The merger is intended to qualify as a tax-free reorganization and will be accounted for as a purchase.

LCI will receive two seats on Qwest's board of directors, one of which will be filled by LCI CEO H. Brian Thompson, who will become vice chairman of the board. The transaction is expected to be completed this fall. Shareholders of Qwest and LCI and regulatory agencies must approve. The majority shareholder of Qwest has agreed to vote in favor of the transaction.

Qwest (Nasdaq: QWST) is building a 16,285-mile national network that will connect more than 125 cities. The network is expected to be completed in the second quarter of 1999. About 3,750 miles are operating from Los Angeles to Cleveland and from Dallas to Houston. Qwest is also extending its network 1,400 miles into Mexico with completion set for late third quarter 1998.

LCI International, Inc. (NYSE:LCI), of McLean, Virginia, is a growing long-distance telecommunications carrier with a 4,500-mile fiber-optic network, which is expected to grow to 8,500 miles by the end of the year.

RCN NAMES SPINA PRESIDENT OF INTERNET SERVICES

In the midst of its honeymoon, RCN Corporation said March 4 that Dennis Spina, former president and CEO of Erol's Internet, Inc., is now a director and vice-chairman of RCN, as well as the company's president of Internet services. RCN also said that Sal Quadrino, former chief financial officer of Erol's, would serve as chief administrative officer.

RCN completed the acquisition of Springfield, Virginia-based Erol's, which provides Internet access to roughly 300,000 customers from Boston to Washington. The purchase made RCN the Northeast's largest regional ISP, the company said.

Prior to running Erol's, Spina was CEO of Suburban Propane. He spent the first 17 years of his career with Federal Express, where he began as a courier and moved steadily through the ranks, eventually becoming an officer of the company and, as a vice president, headed East Coast operations. RCN says that experience fits with its focus on the region. In his new role at RCN, Spina will direct the sales and marketing, network construction, operations, customer service and Internet services departments.

Before becoming Erol's chief financial officer, Quadrino was CFO of Suburban Propane and succeeded Spina as CEO of the Whippany, NJ-based company before leaving two years later to join Spina at Erol's Internet. At RCN, Quadrino will direct management information systems, facilities and human resources. He will also be responsible for the integration of Erol's and another recent RCN acquisition, the Boston-based UltraNet Communications, Inc., into RCN's existing business.

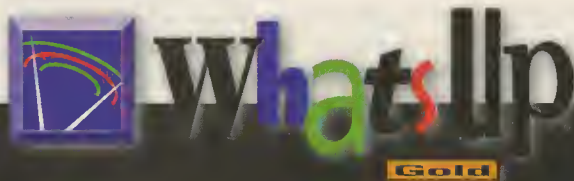
ROMEO AND JULIET ACT I, SCENE IV

Enter European Commission and star-crossed lovers, Romeo (WorldCom) and Juliet (MCI).

The European Commission: Dear Juliet (MCI Communications Corporation), we must put off your wedding to yon Romeo (WorldCom, Inc.) by four months, while we investigate further.

European Commission: Because the EC received so many concerns about the combined market share of the two companies in the supply of Internet backbone services, the commission decided to carry out a detailed inquiry.

Romeo (WorldCom) and Juliet (MCI): As U.S.-based international telecommunications companies offering a range of services including telecommunications services and Internet ser-



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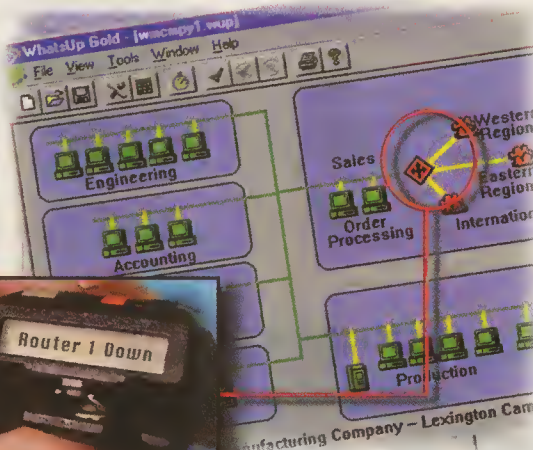
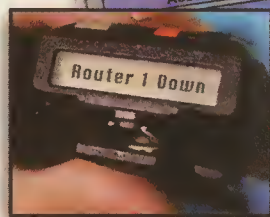


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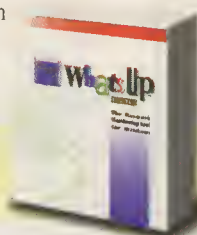
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vices, we remain confident that the commission will approve the transaction and expect it to be completed on schedule in mid-1998.

Romeo and Juliet: WorldCom and MCI will continue to cooperate fully and look forward to continuing their work with the commission and demonstrating the competitive benefits that the merger will deliver in the U.S., Europe and around the world.

Narrator: On November 10, MCI and WorldCom announced their marriage would form a new company called MCI WorldCom. The EC could force the WorldCom and MCI deal to be altered or block the proposed transaction. The second phase review must be completed in four months. The merger is also undergoing continuing review by the Antitrust Division of the U.S. Department of Justice, and several ISPs and labor unions have requested that the FCC hold hearings and deny the merger.

Enter Sprint from the Capulet camp

Sprint, releasing a statement: "The March 4 decision by the European Commission to escalate to a second phase its investigation of the WorldCom/MCI merger represents one of the most important developments affecting the future growth of the Internet. The Task Force has accurately determined that the WorldCom/MCI merger, as currently constructed, raises serious anti-competitive issues that require thorough investigation."

Sprint: The merged company would carry more than half of all U.S. Internet backbone traffic, control more than half of all

direct connections to the Internet and have connections with nearly two-thirds of all Internet service providers. "Such market dominance would have profound implications for Internet performance and pricing. It would very likely short-circuit the growth of the global information network. Many users complain today about Internet performance, but in a highly competitive marketplace it is steadily improving. That almost certainly will change when the worldwide network of networks suddenly — and perhaps irreversibly — effectively becomes a network of one."

Enter Morton Bahr, president of the the Communications Workers of America, from the Montague camp, pleased with the EC decision to investigate further.

Bahr: "In its decision to move to an extended Phase II review, the European Commission recognizes the serious implications raised by monopoly control of the Internet by these companies, and other issues that affect Europe."

IXC AND METROMEDIA EXCHANGE FIBER, SAFELY

IXC Communications and Metromedia Fiber Network, Inc. announced March 4 a major fiber swap enabling both companies to extend their networks into new markets. As a result of the agreement, IXC will link New York, Philadelphia, and Washington, DC, to its coast-to-coast digital fiber network and will complete two additional fiber rings. Metromedia Fiber Network will be able to provide connectivity from Chicago to New York and to other cities on Metromedia Fiber Network's inter-city network, including Washington, DC, Philadelphia, and London.

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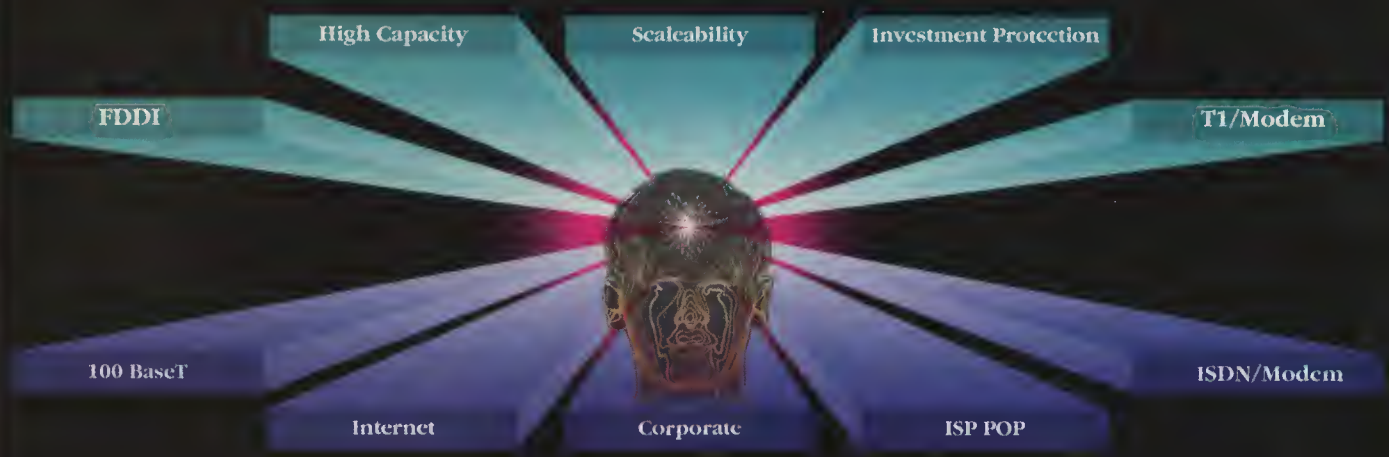
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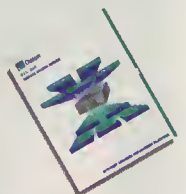
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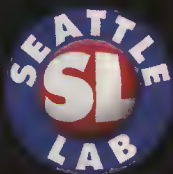
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According to the terms of the agreement, IXC will acquire 260 miles of dark fiber currently under construction from New York to Philadelphia and Washington, DC. IXC has secured leased capacity arrangements on this corridor until Metromedia Fiber Network completes construction. In exchange, the company will provide Metromedia with a 1,200-mile segment of fiber infrastructure from Chicago to Detroit and New York, including cities such as Cleveland and Albany.

The fiber optics being deployed in all stages of IXC's network development use LS non-zero dispersion shifted fiber on secure rights of way generally located in areas not served by other major network carriers. The OC-192-capable network also supports a range of communications technologies that include synchronous optical network technology (SONET), ATM and Frame Relay, and wave division multiplexing.

New York-based Metromedia Fiber Network operates a fiber optic metropolitan area network in New York and is developing local fiber optic infrastructure in Chicago, Philadelphia, and Washington, DC, and a link between New York and Washington, D.C. In a joint venture with Racal Telecom of the United Kingdom, Metromedia also expects to begin providing service between the United States and the United Kingdom this year.

IXC PLAYS THE FIELD

IXC Communications announced March 2 that it has provided PSINet with the right to use 10,000 miles of OC-48 capacity on its nationwide fiber optic network and in exchange has received about 10.3 million shares of PSINet's common stock, with a minimum valuation of \$240 million. In addition, IXC's chairman Ralph Swett has joined PSINet's board of directors.

The companies have also formed a marketing alliance allowing each to market the other's products and services. IXC and PSINet will jointly pursue major customers requiring integrated telecommunications and Internet services.

PSINET PLAYS THE EUROPEAN FIELD

Internet Prolink (Iprolink) joins Canada's iSTAR internet inc. and France's CalvaCom SA as a new member of the PSINet's polygamous arrangement. Financing for the acquisitions was provided by Fleet National Bank of Boston, Massachusetts, under a line of credit provided for acquisition purposes.

Iprolink was founded three years ago and was the first commercial-grade ISP in Switzerland. Based in Geneva, Iprolink's cofounder Mickey Coggins will become the managing director for PSINet Switzerland, reporting to Volker Kleinn, president of PSINet Europe.

Iprolink has 14 POPs in Switzerland and France covering the Swiss cities of Geneva, Lausanne, Zurich, Basel, Bern, Chur, Nyon, St. Gallen, Fribourg, Zug, Winterthur, Baden, La-Chaux-de-fonds, and the French city of St. Genis. If polygamy is intended to produce large families, it seems to be working for PSINet which now has 220 POPs in the United States and over 180 POPs in other countries.

TEXAS INSTRUMENTS CLOSES ON AMATI

Texas Instruments Incorporated completed its acquisition of Amati Communications Corporation February 27 after a spe-

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cial meeting of Amati stockholders. The company was merged with TI's DSL Acquisition Corporation and is now a wholly-owned subsidiary of Texas Instruments. TI previously acquired 77 percent of Amati's outstanding shares through a tender offer consummated on December 24.

All outstanding shares not held by TI were converted in the merger into the right to receive \$20 per share in cash.

Texas Instruments, better known among consumers for its calculators and personal organizers than for the variety of its other electronic products, hopes the acquisition will strengthen its ability to provide digital signal processing products for high-speed Internet connectivity and video services. Amati is a player in digital modem technology, also known as Digital Subscriber Line (xDSL). Texas Instruments is developing digital signal processing technology and modems that it says will provide users with faster, more reliable access to the Internet along with the ability to use a single phone for simultaneous functions. Amati employees, along with TI employees currently focused on the modem market, will combine to form the Datacom Business Unit of TI's Semiconductor Group.

GST DUMPS NACT FOR \$86.5 MILLION

GST Telecommunications, Inc. announced in February that it has completed an \$86.5 million sale of its interest in NACT Telecommunications, Inc. to World Access, Inc.

The sale price included the value of 1.4 million shares of World Access common stock.

John Warta, chairman and chief executive officer for GST, said the divestiture of NACT is part of the company's plan to focus on clustering its CLEC operations and linking them through long-haul fiber networks to strengthen its presence in the western United States. The capital raised will be reinvested into GST's telecommunications service business, and management is committed to expanding operations.

GST announced record revenues of \$36.6 million and a loss of \$12 million for the three months ended December 31. Excluding NACT, GST reported revenues of \$27.6 million and a loss of \$14.4

million for the three months ended December 31. Sounds like most of the companies we cover.

Headquartered in Vancouver, Washington, GST Telecommunications, Inc. operates CLECs and long-haul fiber networks in Hawaii as well as the western United States. Facilities-based GST provides a range of telecommunications products and services including voice, video, data and Internet access.

FRONTIER ENDS WHIRLWIND COURTSHIP

Frontier Corporation said March 3 it completed its acquisition of GlobalCenter in just six weeks.

Frontier is targeting its data services for the small- to medium-sized business market, the company said. Through the expansion of its network services and the digital distribution capabilities of Frontier GlobalCenter, the telco adds high-speed Internet access, collocation and Web hosting products.

FTC WORRIES ABOUT COMPAQ-DIGITAL WEDDING

The Federal Trade Commission asked March 9 for more details on Compaq Computer's proposed acquisition of Digital Equipment.

The companies said they still expect to merge this spring.

Compaq, the world's largest supplier of personal computers, said in late January it would buy computer and network systems maker Digital in what would be the largest merger in the computer industry to date, valued initially at \$9.6 billion. The deal would create a company with sales of nearly \$38 billion, based on combined fiscal 1997 results.

The companies said they will comply with the request for information. This is the second request for more information from the FTC, which was issued under notification requirements of the Hart-Scott-Rodino Antitrust Improvements Act of 1976. ♦

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ISPS MARKET REPORT

Paul Stapleton

ISPS CAN MARRY FIBER, BUT READ THE PRENUPTIAL CAREFULLY

In 1997 big ISPs sold out to "facilities-based" carriers to "stay in the game." PSINet, Inc. (Nasdaq:PSIX) was an exception. To get their access to fiber, it struck a deal with IXC Communications (Nasdaq: IIXC) in which it exchanged 19.99 percent of the company for a 20-year noncancelable lease on 10,000 router miles of OC-48 fiber. I commented on that deal in the June issue of *I&P Report*.

In 1998, the fundamental deal structure of the PSINet "equity-for-fiber" model may take off.

In January, Apex Global Internet Services, Inc. (AGIS) signed a definitive agreement with Qwest Communications International, Inc. (Nasdaq: QWST) to acquire an indefeasible right of use (IRU) for the economically viable life of 10,000 OC-48 SONET route miles (read 20 years).

As you probably know, AGIS, founded in 1994, provides Internet access to users via its customer base of RBOCs, content providers, large corporations and Internet service providers. In the network value-chain, it looks a lot like PSINet.

You probably also know Qwest is building a high-capacity, fiber optic network to deliver voice, data and video connectivity to businesses, consumers and other communications service providers. In the network value chain, it looks a lot like, you guessed it, IXC.

The press release announcing this deal was a little murky. It read, "AGIS Invests \$260 Million In New Network Build."

That statement is incredibly misleading. AGIS did not spend \$260 million on anything, much less build anything. Shame on the spin doctors.

In my search for clarity, I checked the Prospectus of a recent Qwest bond-offering memorandum. When you file with the SEC you have to be a little more precise.

According to the filing, Qwest and AGIS entered a long-term contract for approximately 10,000 route miles of OC-48 capacity. As part of the consideration, Qwest will receive 19.99 percent of the common stock of AGIS and will have a seat on the AGIS board of directors. Qwest will receive monthly operations and maintenance fees over the term of the multi-year agreement.

Additionally, the companies will enter into a joint marketing arrangement to expand their product and

services to include IP telephony, video conferencing, ATM and Frame Relay services.

The present value of the contract is stated to be approximately \$260 million.

The deal sounds almost exactly like the PSINet-IXC deal — an IRU for 10,000 miles of OC-48 for 20 years in exchange for 19.99 percent equity. Both companies have the right to market network services.

PSINet and IXC seemed to think their deal was worth \$240 million. AGIS and Qwest seem to think theirs is worth \$260 million. How come? Cash of that amount is not flowing either way.

This number, let's say \$250 million, is approximately what it cost today to get access to 10,000 miles of OC-48 for the next 20 years.

Today the market rate for dark fiber is about \$75 per fiber per mile per year. The one-time fixed costs to provide electronics and optronics to "light" the fiber is about \$17,500 per OC-48 mile. So we have development costs of about \$175 million and another \$30 million for two dark fibers over a 20-year period. Add in a capital upgrade of \$50 million over the 20-year life of the deal and, presto, a \$250 million deal.

There is only one problem. The two companies selling 10,000 miles of OC-48 don't really have it today. They are required to deliver it in a few years.

That is okay, since 20 percent of AGIS or PSINet isn't really worth \$250 million today.

However it is these types of deals that are needed to get ISPs to these sized valuations. And it is these types of deals needed to get fiber carriers built, too. One reason Qwest is able to do the bond offering mentioned earlier is it can show investors it has a long-term contract in place with a traffic generating company like AGIS.

It's now up to everyone to create that value. Everyone that is, except IXC.

The big difference between the two deals is PSINet guaranteed IXC's equity piece would be worth \$240 million. If the stock market does not say so, PSINet must make up the difference in stock or more cash.

I read nothing that leads me to believe AGIS guaranteed a value on the equity given to Qwest.

After bouncing back and forth between finance, publishing and the Internet, Paul Stapleton has landed squarely in the middle. He is Managing Director of Stapleton & Associates, an Internet focused financial consulting firm. Clients include major players as well as start ups and middle market companies in media, telecomm and software.

Paul Stapleton is also editor of *ISP Report* (to subscribe, e-mail ispreport@mediabiz.com or call 303-271-9960 or fax 303-271-9965; annual rate is \$195; sample issue sent on request) the newsletter of record for financial activity in the ISP industry. Paul welcomes comments and suggestions at paulstapes@aol.com. He lives in Boulder, Colorado with his lovely new bride.

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AOL	NYSE	America Online Inc.	\$85.00	\$90.00	\$98.06	8.96%	95.86	\$9,400.08
CSRV	NASD	CompuServe Corp.	\$13.34	\$12.25	\$14.56	18.88%	92.60	\$1,348.49
CNCX	NASD	Concentric Network Corp.	\$10.25	\$10.00	\$11.50	15.00%	13.51	\$155.31
ELNK	NASD	EarthLink Network	\$22.50	\$24.50	\$31.81	29.85%	9.68	\$307.82
IDTC	NASD	IDT Corporation	\$22.38	\$20.69	\$29.31	41.69%	9.89	\$289.90
WWW	TSE	ISTAR internet inc.	\$0.62	\$0.52	\$0.76	47.10%	24.43	\$18.57
MCOM	OTC	Metricom Inc.	\$12.06	\$9.25	\$11.97	29.39%	13.61	\$162.86
MSPG	NASD	MindSpring	\$29.63	\$28.75	\$39.00	35.65%	7.48	\$291.60
NETC	NASD	Netcom	\$20.75	\$22.75	\$22.50	-1.10%	11.68	\$262.87
OZEMY	NASD	OzEmail Ltd.	\$9.50	\$9.56	\$8.38	-12.42%	10.20	\$85.43
PSIX	NASD	PSINet Inc.	\$6.06	\$6.53	\$7.63	16.75%	40.27	\$307.09
RMII	NASD	Rocky Mountain Internet, Inc.	\$3.00	\$3.00	\$2.31	-22.92%	4.65	\$10.75

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And therein lies the rub. It may cost \$250 million to deploy 10,000 miles of OC-48, (and I assure you, it will cost less to deploy or lease in the future), but it may never be worth that much. Why guarantee it?

From my perspective, 10,000 miles of OC-48 is worth the discounted present value of the free cash flow from the traffic that ultimately rides on that fiber. Want to be my partner and bet we can generate that much profitable business? Sure, let's go! Want a guarantee? No can do. I have to protect shareholders who have already taken a lot of risk.

It will be interesting to see what the IXC overhang does to the stock price of PSINet. Ironically, their PSINet's agreement was approved the week AGIS and Qwest announced their deal. The stock fell \$1 1/8 to \$7 7/8 that day for a market cap of about \$323 million. After IXCs guaranteed \$240 million, that leaves \$83 million for the remaining shareholders. ♦

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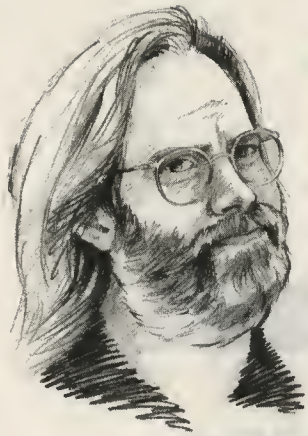
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Java Jitters

by Doug Shaker

FINALLY, A JAVA PRINT MODEL!

One of my duties and pleasures as a Java columnist is to point out problems in Java. Over the past year or so, I have often complained about the lack of a decent print model in Java. I am happy to say that the print model problem is solved, or is about to be solved. Let me tell you about it.

Sun has an series of related software projects in progress. These projects have the joint aim of bringing radically improved multimedia capability to Java. As a group, the projects are called Java Media and Communications. The individual projects are Java 2D for graphics and imaging, Java 3D for three dimensional graphics and sound, Java Animation for 2D sprites and scripting, Java Sound for advanced sound capabilities in software rather than hardware, Java Speech for speech recognition and synthesis, Java Telephony for phone set control and Internet-based telephony and Java Media Player for playing sound and video clips. There is a lot of stuff there and I can't go into everything in this month's column. Take a look at <http://java.sun.com/products/java-media> for details.

One of these APIs, Java 2D, is an answer to the print model problem. It is a device-independent and resolution-independent graphics model that allows the use of fonts. For those in the know, the buzzword feature list includes: antialiased rendering, Bezier curves, affine transforms, compositing, alpha channel transparency, accurate color spaces, color space conversions, arbitrary fill styles, stroking parameters for lines and curves, TrueType and Type 1 font support, and interfaces for arbitrary graphics devices, including printers and screens. For the buzzword impaired, this means that you can print the same thing to screens and to printers and you can print some darned nice stuff.

After I found about Java 2D, I finagled an interview with one of the technical leads on the project, Jerry Evans, a Sun distinguished engineer.

Doug Shaker: Jerry, you are a distinguished engineer. What distinguishes you?

Jerry Evans: Well, that's just a job title at Sun. It's on the technical ladder. It's equivalent to director on the management ladder.

Shaker: Where did you get that title?

Evans: I've been at Sun for 15 years, working in various areas of graphics. I was involved in a lot of the

graphics APIs we did on Solaris. I was involved heavily in XGL and somewhat in XIL. I was also in the underpinnings of getting things to run fast on our current X11 implementations.

Shaker: What are your goals for Java 2D? What do you want to be better when Java 2D is all done?

Evans: We want there to be a first-class graphics and imaging model available to people developing applications in Java. With the current 1.1 APIs, people have complained that they can't do what they want to do. We have improved the text functionality, the graphics functionality, the imaging functionality. But we haven't tried to just match what is available on other platforms right now. We tried to look at what we could really do that would be close to the cutting edge of what is available and still fit into a core API. You can't do everything, but there has been a lot of innovation in graphics in the last decade or so that isn't widely reflected in the platform APIs. We've taken some of those capabilities and incorporated them into the Java 2D API.

Shaker: Can you give me some examples?

Evans: Well, the whole area of text has greatly changed over the last 15 years. A lot of that isn't yet reflected in the platform APIs. The area of international text, for example, is not well-supported in most platform APIs. Or in the area of graphics, the notion of an alpha channel isn't widely supported by the base APIs.

Shaker: What is an alpha channel?

Evans: In addition to the color channels, you can have an alpha channel that controls transparency. You see the use of an alpha channel in something like Adobe Photoshop, but you don't see it in the platform APIs — in Windows or OpenGL. We have taken the concept of an alpha channel to the base API level.

Another area would be imaging where we have support for a wide range of image depth, format, and functionality which goes beyond what is found in some platform APIs. Download the API documentation from the web and look at some of the imaging ops. Affine transforms are supported — not just scales, not just translations — affine transforms, rotates, some of the other complex convolutions.

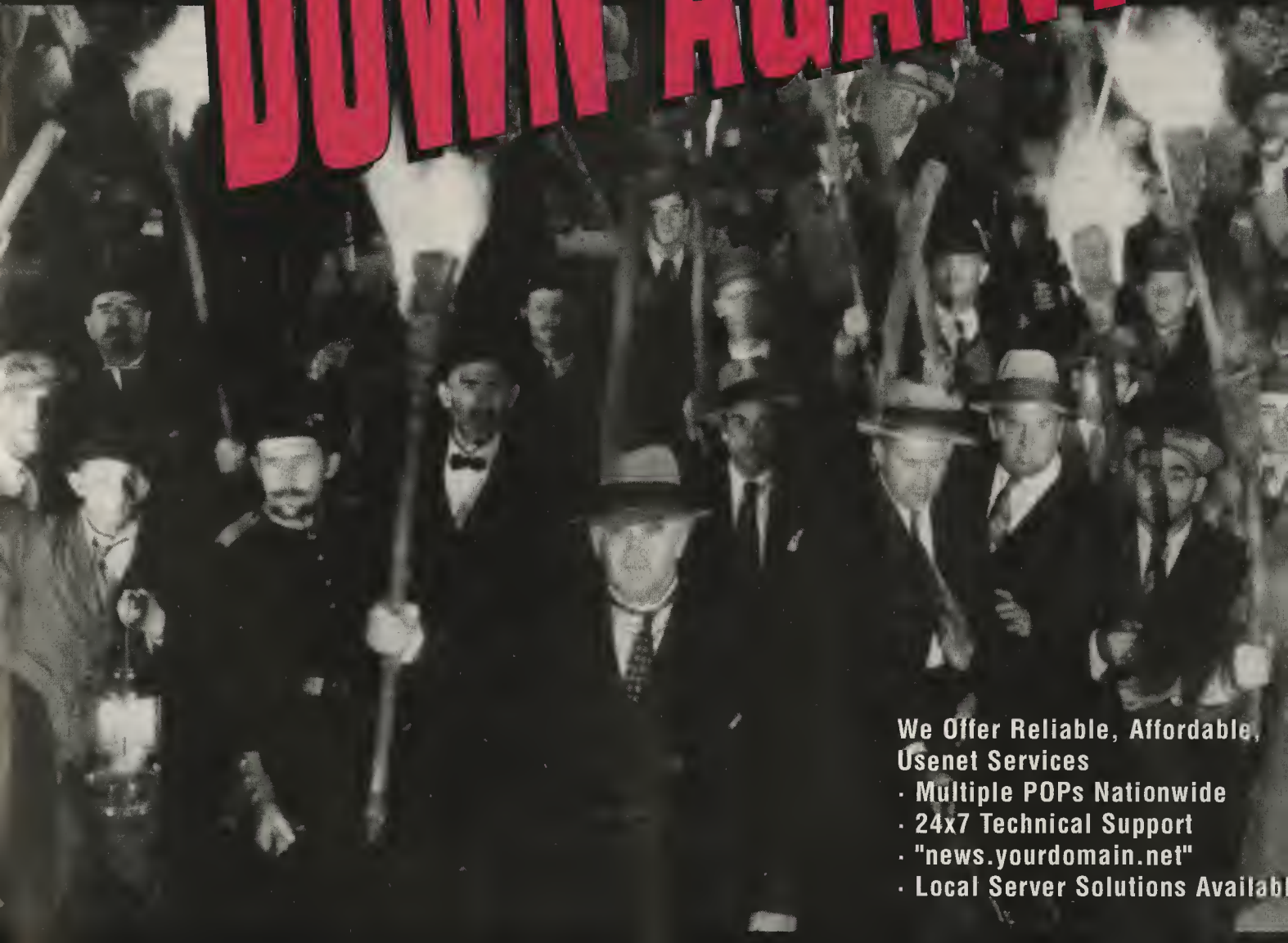
Shaker: How are you folks going to deal with printers here? It seems to me that printing is an enormous hassle for any platform, but it is even more so for Java because Java doesn't really know what hardware platform it is going to be running on.

Doug Shaker works at Expert Support Inc., a Silicon Valley company that writes and produces both technical documentation and training materials (www.xs.com).

Doug has one wife, two children, three pets and four computers. This numeric progression pleases him, though he cannot exactly say why. Doug, in a fit of nerdy machismo, has acquired his own personal Internet domain. He can be reached via e-mail at doug@theshakers.org.

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Evans: Right! What is actually released from Javasoft is an implementation for Win32 (Windows NT and Windows 95) and for Solaris. On Windows NT/95, we take our implementation down to GDI calls. On Solaris, it gets converted to PostScript. That's how we map to those platforms. Someone porting to a different platform may have to map to something else.

As far as what the API looks like, you get a Graphics2D context as a base object for drawing. If you are printing, instead of getting a Graphics2D context for a screen, you get one for a printer. You do your drawing operations on that. There is also support for print dialogs, sending something to a printer, telling it which pages to print, and efficient printing of large images. You can print anything you can draw. All this is implemented in the current beta on Windows. The next beta we will implement it on Solaris as well.

Shaker: A question for you on fonts and applets. Does the font have to be on the server, on the client machine, or both? How are fonts going to work in an applet situation?

Evans: The short answer is — it's whatever fonts are installed on the platform. If you have installed the fonts on your Windows machine, and if they are a TrueType or a Type 1 font, then we should find whatever is available.

Shaker: I have an NT box and I've got a Solaris server back at my ISP. I am doing a chess application that uses a chess font that I can't really approximate with any other font. If I have any applet on the server that wants to display a chess diagram using the chess font, that font needs to be available on my Windows machine in order to run that applet on my Windows machine. Is that correct? Or do I put it on my Solaris web server and then the applet downloads it across the net?

Evans: The basic answer is that it needs to be installed on the machine where you are running the applet. That means it needs to be a widely available font. But we are also looking at taking a bytestream from the server and turning it into a font. That capability is not in the current beta and I can't promise when that capability will actually be available. There is a lot of activity going on among font vendors in this whole area — embedding fonts in web pages, subsetting fonts, and things like that.

Shaker: It looks to me like you guys worked with Adobe on Java 2D. Is that true? Or am I just fantasizing that?

Evans: No, that isn't true. We worked with them to define the API. They were a full partner in defining the API. A letter of intent had been signed about licensing technology from Adobe, but that did not come to fruition.

Shaker: What were their goals in working on the API?

Evans: Their goals were that they wanted to put certain applications in Java. Earlier versions of the JDK did not let them do what they wanted to do. If you look at the API, you can see a definite influence from PostScript.

Shaker: Oh, definitely. Given how deeply the Unix community is committed to PostScript and how central Adobe seems to be to high-quality print imaging, it would be sort of surprising if there wasn't a PostScript influence there.

What kind of design choices did you have to make when putting together Java 2D? What were some of the things you considered but didn't make it in?

Evans: Well, there is always lots of things that you want to do, but we have to consider the overall size of the implementation and we have to consider what is possible to do in the timeframe. We also have worry about getting the performance of the implementation up.

I'll give you an example in the area of imaging. There had been requests for a lot of advanced imaging operators for handling tiled images in large areas. We decided these should not be in the core API. Instead, we defined an extension API called Java Advanced Imaging that will handle some of these more advanced operations. But we tried very hard to make it compatible with Java 2D. The Advanced Imaging classes are built on the Java 2D classes. That is an example of something we moved outside the core API.

I can also give you an example of something, in the area of text, that we didn't have the time to implement. Internationalization of text is a very big problem. We go a long way in the current release of Java 2D towards solving it but we haven't been able to put everything needed for every language. We've come a long way, though.

Shaker: I think Java 2D will go a long way toward making Java a usable product for MIS and in-house software companies.

BETA RELEASE

If you want to test out Sun's beta release of Java 1.2, you have to be ready for some pretty nerdy work to get it to happen on your machine. The commercial Java development environments from the major vendors — Symantec, IBM, Sun, Borland, and Microsoft — are all focused on a single version of Java. That version is currently Java 1.1. You can't use them for Java 1.2 until they come out with upgrades. That probably won't be for six months to a year. But this Java 2D stuff is pretty interesting stuff. I think it is worth a few hassles to be able to try it out.

If you want, you can download just the JDK and then pull the hairy-chested, macho, assembly-language programmer option and do everything from the command line. This is plausible, but unnecessary. There is a freeware Java IDE that will work with the beta software. The IDE's main disadvantage is that, being freeware, you need to spend some time putting it together and understanding it.

I have figured out how to make it work on Windows NT. If you are running some variant of Windows NT or Windows 95, you should be able to do pretty much the same thing and it will work. You will need the following hunks of software: the Sun Javasoft beta release, the Gnu BASH command line shell, a relatively recent version of Emacs, a Java syntax highlighting package for Emacs, and a Java programming package for Emacs. Instructions for downloading follow.

Sun's 1.2 Java release. To get the beta release, you need to join the Sun Javasoft Developer Connection. No money involved. Just point your web browser to <http://developer.javasoft.com> and sign up. Go to the early access area and select the JDK 1.2 beta 2 download. Get both the documentation (5.5 MB) and the software (15 MB). Yes, it will take a while to download.

The GNU BASH command line shell for Win32. BASH is a command shell that was originally put together for Unix and for Unix clones. It has been ported to Windows and its programmability make it ideal for this project. The editor will pass command line arguments to

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BASH behind your back and then you won't have to deal with command line compiles. Go to www.cygnum.com/misc/gnu-win32 and look for the latest non-beta release of BASH for Win32. There will be two versions — the user tools and the development tools. You do not need the development tools (C and C++), but you can get them if you want. I just downloaded the user tools. The file will be labeled something like `user-tools.exe`. While you are there, you should also use your browser to look at and make local copies of the BASH FAQ table of contents (www.cygnum.com/misc/gnu-win32/faq_toc.html) and the BASH FAQ itself (www.cygnum.com/misc/gnu-win32/faq.html).

Emacs. This is the ASCII editor created by Richard Stallman, arguably the greatest and perhaps the strangest programmer alive. It is amazing programmable and amazingly quirky. I love it. Others hate it. See for yourself. The URL for the download is <ftp://cs.washington.edu/pub/ntemacs/latest/i386/emacs-19.34.6-bin-i386.tar.gz>.

Java Syntax Highlighting. This is an obscure one. It uses the amazing programmability of Emacs to parse your Java code, then color code the display to show you comments, reserved words, class names, etc. in different colors. Go to www.csd.uu.se/~andersl/emacs.html and page down to the Java Font Lock section. Download the source code. It is a small file, about 14 KB, with the name of `andersl-java-font-lock.el`. The server is in Sweden, but the file is really small, so don't feel guilty about using transatlantic lines.

Java Programming Package. Go to <http://sunsite.auc.dk/jde> and download the zipped version of JDE. It will have a name something like `jde-1_9_1.zip`. Again, it is small (100 KB), so don't worry about the transatlantic lines. Now, putting it all together is a little hairy, but I think I have found most of the rough spots. Installing everything involves modifying your PATH and CLASSPATH environmental variables. In all likelihood, this modification will make your existing Java development system crack up. If this is a problem for you, log in on your system as Administrator, create a new user profile, and make the HOME, PATH and CLASSPATH modifications as that user. Now you can log in as the new user when you want to use Java 1.2 and log in as your old self when you want to use an earlier version. I changed the desktop patterns and colors for the Java 1.2 user so that I

could easily distinguish the two states. No whining if you mess it up.

First, unpack the two files you downloaded from Sun. One is an executable with the Java software in it. The other is a WinZip file with the documentation in it. When the unpacking programs ask you where to put the unpacked files, point them both at the same directory. One will create a doc subdirectory and the other will create several other subdirectories — bin, lib, demo, and include. You want everything together.

Now, install BASH. Start by running the executable you downloaded. It will start up an installation program that will put the files where you want them and tweak the registry as needed. The installation program will also caution you to read the README file before you do anything else, but it will frustrate you by not creating any README file. Ah, freeware! Go to the FAQ files I had you download and look at them, instead.

To get BASH running, you will then need to go to your system control panel, pull up the environment tab, and then add the BASH binary directory to your PATH variable. If you installed BASH in `C:\Program Files\Bash`, then the BASH binary directory will have a name something like `C:\Program Files\Bash\H-i386-cygwin32\bin`. Add that directory to your PATH variable. After you have added the binary directory to your PATH variable, you also need to create two top-level directories on your C: drive; `bin` and `tmp`. Then you should copy the file `sh.exe` from the BASH binary directory to the new `C:\bin` directory. You will want copies in both places.

Then you should create, on your C: drive and nowhere else, a home directory for yourself. This directory needs to be on the C: drive because both Emacs and BASH depend on it to find their user configuration files, but, just to make life hairy, BASH wants to see things in Unix directory format and Emacs wants to see the same thing in Windows directory format. BASH is smart enough to turn back slashes into forward slashes, but it cannot reliably find disks other than C:, unless they are mounted as subdirectories below C:. If the Home directory isn't on C: then one or the other of the software products won't be able to find their initialization files. My home directory is `C:\home\dshaker`. After creating yours, go to the system control panel again, and create an environmental variable called the `home` and set to the path to

your `home` directory. On my system, the home is set to `C:\home\dshaker\`.

Now you should install Emacs. Emacs comes as a gzipped tar file. Gzip is a Unix compression utility. WinZip knows how to extract gzipped tar files, so point your copy of WinZip at the file you downloaded. It will ask you for the name to use for the un-gzipped file. Just cut the ".gz" of the name of the file you downloaded and use that. If you downloaded `emacs-19.34.6-bin-i386.tar.gz`, then tell it to create a new file with the name of `emacs-19.34.6-bin-i386.tar` and it will do the right thing. Then open that file with WinZip and it will create a directory of several hundred files for you.

Now you can take a look at the README file and the README.NT file in the top-level Emacs directory. The README.NT file is more useful. The most important instruction in there is to run the `addpm.exe` program from a command line with an argument of the pathname for your new Emacs directory. For example, if you installed Emacs in `C:\Software\Emacs`, then you would go to a command line and execute `C:\Software\Emacs\bin\addpm.exe`. This will make some registry entries for you and it will add Gnu Emacs to your program menu.

Emacs is the base of this IDE, so you will have to learn Emacs to make the environment very useful. You don't need to learn Emacs right now, but when you want to, look at the FAQ, look at the tutorial that comes packaged with Emacs, and get the book *Learning GNU Emacs* by Debra Cameron and Bill Rosenblatt (O'Reilly & Associates, ISBN 0-937175-84-6). Emacs is strange, quirky, powerful, and grows on you. Stick it out a week and you will probably use it for the rest of your programming life.

You are almost home now. Copy the file `andersl-java-font-lock.el` from wherever you put it into the lisp subdirectory in your Emacs installation directory. Unpack the `jde-1-9-1.zip` file and put a copy `jde.el`, `jed-db.el`, `jde-run.el`, and `speedbar.el` into that same directory. Now go to that home directory that you created for yourself and make yourself a file with the name ".emacs." This is your Emacs initialization file. Put the following in your .emacs file:

```
(load "jde")
(setq jde-web-browser "C:/path/to/your/web/
  browser/executable.exe")
(setq jde-doc-dir "C:/path/to/your/jdk/directory/doc/")
```

(jde-db-set-source-paths "C:/path/to/your/jdk/directory/src;C:/path/to/your/java/source/)
(setq shell-file-name "bash")

You will need to substitute your real path names for the ones I have given. Notice that the path names are given with forward slashes rather than backward ones. Notice that spaces in the file and directory names have to be escaped with backward slashes.

Finally, go back to the system control panel, pull up the environment tab one more time, and put the Java 1.2 binary directory — probably named something like **C:\Program Files\jdk1.2beta2\bin** — in your PATH variable so that the 1.2 Java compiler will be the first Java compiler that the operating system finds when it searches through the path. If you have a CLASSPATH variable, modify it so that the system will find the 1.2 libraries before any other Java class libraries. Depending on where you installed the JDK, this will probably mean tacking something like **C:\Program files\jdk1.2beta2\lib\classes.zip** on to the front of your CLASSPATH variable.

All done! If you start up Emacs and load in a Java file, it should parse the code into color-coded chunks. You should be able to browse classes, compile and debug from within Emacs. Read the documentation for details, but there you are, a free-ware Java development system with the latest Java 1.2 beta release to play with. *Bon appetit!* ♦

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Wallace Wang is the author of *CompuServe For Dummies*, *Visual Basic For Dummies*, *More Visual Basic For Dummies*, *Microsoft Office 97 For Dummies*, and *More Microsoft Office 97 For Dummies*.

When not working with computers, he performs stand-up comedy and has appeared on A&E's *Evening at the Improv* TV comedy show. He can be reached via e-mail at 70334.3672

@compuserve.com, bothekat@aol.com, bo_the_cat@msn.com, or bothecat@prodigy.net

Hardly a month passes until America Online does something more idiotic than before. From censoring e-mail containing the word "breast" (thereby preventing breast cancer survivors from communicating) to deleting e-mail that contained foreign languages (which AOL feared people might use to type obscene words in French, Spanish, or German), AOL seems intent on tarnishing its own public image any way it possibly can.

Its latest public embarrassment comes after the Navy tried to discharge Senior Chief Petty Officer Timothy R. McVeigh (not a good name to have these days) after 17 years of honorable service. Navy investigators learned of the Timothy McVeigh's AOL profile page from a Navy spouse serving as an onshore ombudsman for crew members of the nuclear-powered attack submarine USS Chicago.

The screen name listed on the profile page was "Boysrch" and under hobbies, the profile page listed "driving, boy watching, collecting pictures of other young studs." The page listed the author, "Tim," as being in the military and based in Hawaii, but did not specify the service.

So a Navy spokesman simply called up America Online, claimed he was a "good friend" of Timothy R. McVeigh, and got AOL to disclose the author's real name. McVeigh later admitted that the profile page was his, but filed a privacy-violation lawsuit, claiming that the Navy violated the Pentagon's "don't ask, don't tell" policy.

While McVeigh won his lawsuit, allowing him to stay in the Navy, the question on privacy centers around America Online's incompetence and violation of its own rules, prohibiting the disclosure of personal information about its members.

"Our member services representative did confirm information presented to him by the Navy," AOL officials said in a statement. "This clearly should not have happened and we regret it."

In its defense, AOL has decided to blame the Navy by saying, "the Navy deliberately ignored both federal law and well-established procedures for handling government inquiries about AOL members" in requesting the information on one of its members. "The Navy investigator who telephoned AOL did not identify himself properly and did not reveal the true purpose of his call," AOL officials said in a statement.

In other words, the fault lies with the Navy and not with AOL's own blatant violation of its own rules. "In light of this situation, we are instituting additional measures that will reinforce our privacy policies and procedures to our member services representatives," AOL officials claimed. "This was a case of human error under very unusual circumstances. We want our members to know that privacy is of paramount importance to AOL and we take our responsibility to protect it very seriously. We will do everything we can to maintain that commitment."

Unless, of course, distributing information about its members could earn AOL's additional advertising revenue, then AOL's privacy rules may be blissfully ignored once again. With this latest trouble with AOL subsidizing, anyone want to guess the next stupid move AOL will make tomorrow?

AMERICA ONLINE VS. SPAM

America Online has filed lawsuits in U.S. District Court for the Eastern District of Virginia against two alleged spammers — LCGM Inc. and Web Promo Inc., both of Madison Heights, Michigan, which AOL claims has been bombarding its users with e-mail advertising sexually-explicit web sites.

The companies "repeatedly spam AOL members with advertisements from a myriad of Internet domains, including 'live-video-sex.com,' 'pornjunkie.com,' and 'hot-sex.com,'" AOL officials said. Some of the messages contained hypertext links that bring users directly to pornographic sites.

America Online claims it asked LCGM and Web Promo to stop sending bulk e-mail, but the companies refused while using forged headers to make the messages appear to have come from AOL itself.

In addition to the injunction barring the companies from access to AOL users' mailboxes, the lawsuit also seeks an unspecified amount of monetary damages, most likely so America Online can continue its marketing campaign to convince companies to advertise on AOL instead.

ONLINE SERVICES BECOMING ISPS

America Online recently surpassed the 11-million member mark but it is still not happy. Although it makes a sizable profit charging members monthly dues ranging from about \$5 to \$20, the real money lies in advertising, not membership subscriptions.



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A growing number of companies are putting news, travel services, entertainment, and other content directly onto the web, where it is available at no charge to any user with Internet access and a web browser. As a result, proprietary content costs more money while attracting fewer new members than in the early days of online services.

Prodigy has teamed up with Excite, MCI has joined with Yahoo!, and CNET has allied itself with Sprint. Even Microsoft is worried about attracting advertisers, so it recently bought Hotmail, a free e-mail service available to all Internet users.

The goal of all these services is to become the first web page that people see when they connect to the Internet. The more "hits" a web site can attract, the more money it can make through advertising. By next year, the only online service worth talking about will be America Online.

EXCITE AND PRODIGY JOIN FORCES

Internet Media company Excite has agreed to become the chief provider of content and services to subscribers of Prodigy Internet. The service will offer Prodigy subscribers Excite's personalized "My Excite Channel," which can be set to deliver user-selected information such as sports scores, stock quotes, TV listings, news, and weather. Prodigy subscribers will also have access to custom versions of Excite's search service and topically organized channels.

While Excite provides the content, Prodigy can free itself to focus on being a reliable Internet service provider. Apparently Prodigy decided that self-created, specialized content for its members didn't make sense when so many other companies on the Web were already duplicating much of Prodigy's efforts.

Of course, that means content on Prodigy won't be exclusive to its members, eliminating what miniscule marketing advantage it might have used to compete against other ISPs. But at least Prodigy has bowed to the inevitable and moved to the Internet faster than fading dinosaurs like CompuServe and Genie.

AMERICA ONLINE EXPANDING IN GERMANY

America Online is expanding its online network in Germany to allow subscribers to log on anywhere in the country for the cost of a local telephone call. The German branch of America Online, called AOL Bertelsmann Online GmbH, has 400,000 subscribers in Germany and another 400,000 in the rest of Europe. Combined with CompuServe's members, America Online's European membership is 1.5 million, equally the Deutsche Telekom T-Online service, the largest online service in Europe.

Besides offering Internet access, AOL Bertelsmann plans to offer Internet phone calls and book sales. In the year that ended June 30, 1997, Bertelsmann had sales of 22.4 billion marks (\$12.2 billion), making it the world's third largest entertainment group after Time Warner and Walt Disney Co. To help fuel future German growth, AOL Bertelsmann is marketing a television ad campaign with the slogan "Online for everyone."

YAHOO! AND MCI PLAN JOINT ONLINE SERVICE

To compete against the growing might of America Online, Yahoo! and telecommunications giant MCI Communications will offer a jointly branded online service, dubbed Yahoo! Online powered by MCI Internet.

The proposed Yahoo! Online service is designed to simplify the process of connecting to the Internet for customers seeking an alternative to America Online. The service will be marketed to Yahoo! Internet users, including those who have an existing Internet connection at work but are seeking a service for Internet access from home. MCI also plans to market the service to its long-distance customers to challenge rival AT&T's WorldNet service.

Yahoo! Online will offer subscribers nationwide access to the Internet with local phone numbers in major metropolitan areas. Like America Online, Yahoo! Online plans to provide electronic mail, chat, classified ads and a variety of online shopping opportunities.

The combined forces of Yahoo! and MCI compete directly with Snap! Online, which is marketed by CNET and Sprint. "We really believe we can be very successful in capturing the new growth in the (Internet access) market," said David Trachtenberg, MCI's director of brand marketing.

So if you want an alternative to America Online, look for Yahoo! Online or Snap! They may not be as popular as America Online, but at least they give you a better alternative than CompuServe for accessing the Internet.

AMERICA ONLINE STARTS DIGITAL CITY NEW YORK

America Online's Studios has launched Digital City New York (keyword: Digital City), a local Internet guide, that provides regional information similar to Microsoft Sidewalk and privately held CitySearch.



Digital City New York provides news, sports, weather, traffic, tourist data, entertainment and other information on New York available both to Internet users and AOL members. Its seven departments range from News and Sports to Movies, Dining and Citywise, a source for urban survival tools (in New York, that could range from mace and pepper spray to AK-47s and hand grenades). Digital City is currently available in a total of 32 cities.

Digital City follows two other highly-hyped projects that America Online has migrated to the World Wide Web: Entertainment Asylum — a collection of Hollywood gossip, celebrity chats, movie reviews and other material for entertainment junkies — and Electra (www.electra.com) — a women's site offering health and beauty tips, celebrity profiles and advice columns.

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- ▲ POP3, IMAP4, SMTP email
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- ▲ Ethernet option for LANs & cable modems
- ▲ Flicker-free display
- ▲ SSL & public key encryption
- ▲ Smartcard reader
- ▲ Printing on HP printers
- ▲ Software upgradable over the Internet



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AOL Studios, the content-creation department of America Online, expects that sites such as Entertainment Asylum will attain 1 million hits a day. Currently, less than 10 percent of those hits come from non-AOL users. Eventually, America Online hopes that more non-AOL members will start visiting these sites so it can charge more for online ads. Since AOL is rumored to be spending close to \$10 million to provide content for each site that migrates from AOL to the Web, America Online needs all the money it can get.

GROWTH THROUGH ACQUISITIONS

America Online's CEO, Stephen Case, expects America Online to grow through increased consumer demand for on-line computer services and through industry acquisitions. After gobbling up CompuServe, what could be next?

Microsoft will likely never sell its Microsoft Network since it wants to retain partial control over people accessing the Internet. Other online services look like poor take-over candidates. Does anyone really want the headache of taking over Genie or Delphi?

Since technical problems, privacy issues, censorship disputes, and sexual stalkers hasn't deterred people from joining America Online, expect AOL to continue its rapid growth. Unless America Online refuses to wean users off its proprietary software and toward Internet standard browsers, AOL should continue making money despite all obvious reasons why it should be losing it.

AMERICA ONLINE MAY LAY OFF COMPUSEVERE WORKERS

After gobbling up CompuServe, America Online is considering laying off more than 300 CompuServe customer support personnel, or more than 20 percent of the company's work force. CompuServe, which has a total work force of 2,900, employs between 1,000 and 1,200 people in its online services unit.

Since CompuServe's management had no idea how to keep the online service thriving, America Online should consider laying off CompuServe's top executives along with its marketing department as well. By the time America Online gets done gutting CompuServe, there may not be anyone left to run the online service, which shouldn't really matter since hardly anyone is bothering to sign up with CompuServe anyway.

HOTMAIL GOING DOWN THE TUBES?

To strengthen its grip on the elusive Internet, Microsoft recently spend \$300 million to \$400 million to buy the free e-mail service, Hotmail, which services nearly 11 million users, and is gaining about 70,000 new customers daily.

Unfortunately, since Microsoft's acquisition of Hotmail, many users have been complaining that the service has become less reliable. Complaints range from sluggish responses to being completely shut out of their e-mail account for days at a time. Microsoft claims that the problems are the result of Hotmail's sky-rocketing growth (isn't this the same excuse America Online uses too?), but that these technical problems will be solved eventually.

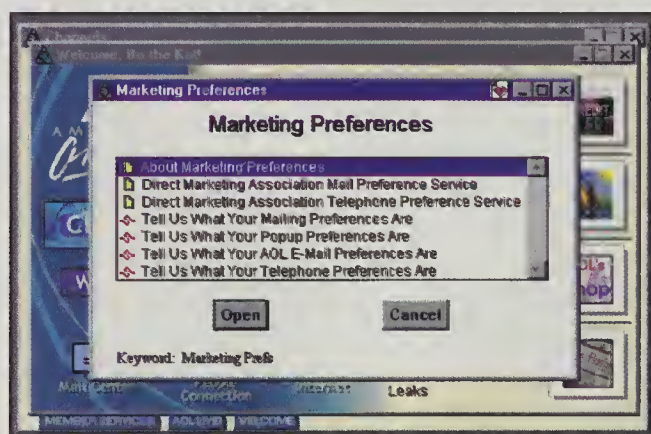
Since every Microsoft foray into the online service world has met with unimpressive results (look at the Microsoft Network and Microsoft Sidewalk for proof), Hotmail could soon be the next free e-mail service to sink into oblivion.

HOW TO KILL ADS IN AMERICA ONLINE

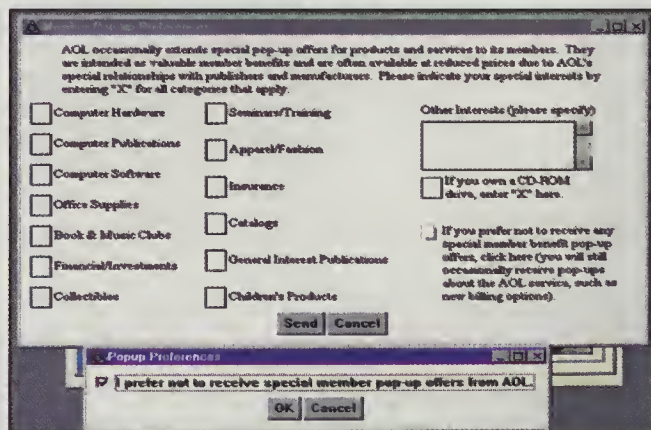
Even though America Online is (theoretically) making a fortune off its 11 million subscribers paying fees ranging up to \$19.95 a month, the company is making more money by forcing users to view its many advertisements each time they log on.

Such pop-up ads are especially troublesome since they display two or three dialog boxes before giving you a chance to hide them from view. That's how America Online made one hundred million dollars by promising Tel-Save, a long-distance phone company, that it would force users to view Tel-Save's ads for the next three years whether they want to see them or not. Apparently AOL sees the only difference between spam and online advertisements is that spam comes from companies that haven't paid AOL any money yet.

So if you're tired of America Online forcing advertisements in your face every time you log on, try this method. Open the "keywords" dialog box and type "marketing prefs."



Once the "marketing preferences" menu pops up, click on the "pop-up preference" option and then click on the a tiny window to verify that you don't want those annoying pop-up advertisements to appear every time you log on.



While you're in the marketing preferences menu, you can also ask AOL not to give out your phone number or address to advertisers. By taking this simple step, you can reduce much of the advertising clutter that gets in the way of using AOL and actually make America Online a halfway decent ISP to use on a regular basis.

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STREAMING MEDIA by Doug Mohney

PLUG-IN-LESS VIDEO, INDUSTRY UPDATES, INTERNET BROADCAST PROVIDERS

As I write this, "Video on the Net" is less than two weeks away (February 11-12, 1998). Unfortunately, in the paradox that is print, by the time you'll read this article, it will be April and I will be sitting around at "Voice on the Net" in San Jose. Or at my desk in Laurel writing the SkyCache theme song.

PLUG-IN-LESS VIDEO — REAL SOON NOW

Another unfortunate paradox I've been forced into is writing about software announcements before they've been implemented and proven to work. Many people have recognized that having to download and install a browser plug-in — regardless of what it does — really sucks. It sucks worse if the plug-in doesn't work as advertised or blows up if your machine doesn't have what the plug-in expects in the way of system resources.

Having recognized this annoyance is slowing the acceptance of Internet broadcast. The twin towers of Net video power — Microsoft (www.microsoft.com) and Real Networks (www.real.com) — are taking different approaches to making streaming media an integral part of the browser. Microsoft is following its standard approach and plans to borg . . . er . . . incorporate the functionality into a future version of Windows, perhaps as soon as Windows 98. In the interim, Microsoft announced NetShow 3.0 beta that includes the Windows Media Player, a "universal" streaming media client that understands both, Microsoft NetShow ASF format and Real Networks formats. We can assume from a technical standpoint, implementing these features is a piece of cake. However, the Department of Justice may kvetch at the concept at a later date, especially considering the current skirmishing going on between the browser and the desktop. There's also a line about how the NetShow server can support up to 1,200, 28.8 Kbps clients on a single Pentium II server. That I'd love to be able to parse out in detail.

On the other hand, Real Networks has announced a joint development project with Sun Microsystems to produce a Java-based video client as well as a Solaris-optimized server and ports of RealEncoder and RealPlayer. A Java-based client has the advantage of being able to deliver streaming media across multiple platforms. Java clients can be relatively easily downloaded at run time, so the latest and greatest revision can automatically appear in your browser.

However, this brings up another interesting point. Java client code, if not cached somewhere, has to be downloaded every time you look at audio or video. This problem is already annoying enough with some of the current ad hoc Java products results in some horrible delays if the clients grow to a couple of megabytes in size. It places responsibility on the server infrastructure (well, somebody's) to deliver the client before any audio or video is downloaded. Having the functionality embedded within the operating system will result in faster run times when compared to having to download Java code every time.

INDUSTRY UPDATES

Real Networks and Audible have ported Real Audio format to the Audible player. Further, the Audible web site (www.audible.com) has become more cooperative, and I can report that most *New York Times* best sellers are downloadable for your listening enjoyment for \$9.95 to \$12.95, with runtimes of anywhere from two to six hours. On the other hand, wig-wig technology analyst reports average \$9.95 for 30 minutes of listening time while the verbal wisdom of Harvard Business Publishing starts at \$9.95 and runs to \$13.95 from anywhere from 30 minutes to four hours, depending on who is talking and what they are talking about.

INTERNET BROADCAST PROVIDERS — THE FIRST LIST

An Internet broadcast provider (IBP) provides the technical facilities and specialized services necessary for audio and video to large audiences. By virtue of having to handle large amounts of bandwidth to support large audiences, an IBP typically is a national backbone or a very well organized technical shop with connections/services to multiple Internet service providers. The list that follows is a partial summary and by no means reflects a full and complete compilation of IBPs.

WHAT ISN'T IN THIS BATCH

Some people are clamoring for an Internet broadcaster system integrator list. An IBSI handles everything from the camera and microphone work to encoding and hand-off to an IBP, such as *itv.net* (www.itv.net), *The Sync* (www.thesync.com), and *TV on the Web* (www.tvontheweb.com). Trust that there will be a future column with a list of system integrators with a discussion of capabilities and customers.

Doug Mohney was employee #10 at DIGEX. He has learned, and forgotten, a lot about help desk support, competitive intelligence, sales and marketing, leased-line service ordering, telco service, and public relations. He makes no pretenses at understanding anything more about the technical side of IP other than being able to get a PPP account working.

His writings have been published in *LA View*, *Washington Technology* and the *Washington Post*. Doug receives e-mail at moo@clark.net.

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THE LIST

Alternative Entertainment Network

Web address: <http://www.aentv.com>
 Media formats supported: Real System, Microsoft NetShow
 Max number of live users supported: 2,000 concurrent (can be expanded)
 Average number of live users on a broadcast: 600
 ISPs used: Network Intensive (<http://www.ni.net>)
 IP multicast support: Yes
 Months/years of operation: 24 months
 Staff size dedicated to Internet broadcast operations: 13

AudioNet

Web address: <http://www.audionet.com>
 Media formats supported: Real Video, Microsoft NetShow
 Max number of live users supported: 13,000+
 Average number of live users on a broadcast: 600
 ISPs used: Multiple, including UUNET
 IP multicast support: Yes
 Staff size dedicated to Internet broadcast operations: A whole bunch
 Comment: The prototype next generation broadcaster, AudioNet ran out and built the largest dedicated streaming media network around. Look for these Texans to start making noises to IPO if they don't get snapped up.

GRIT

Web address: <http://www.grit.net>
 Media formats supported: Real Video, Microsoft NetShow
 Max number of live users supported: 2,000
 Average number of live users on a broadcast: 300
 ISPs used: MCI
 IP multicast support: Soon
 Months/years of operation: 24 months
 Staff size dedicated to Internet broadcast operations: Not Available
 Comments: GRIT has made no bones about stamping themselves as a broadcaster through events such as the national Tour de Grit road trip.

InterVU

Web address: <http://www.intervu.net>
 Media formats supported: Microsoft NetShow for live broadcasting
 Max number of live users supported: 2,000 immediate, unlimited with planning
 Average number of live users on a broadcast: Not Available
 300 ISPs used: Includes but not limited to: UUNET, CerfNet, DIGEX, SuperNet, Others
 IP multicast support: Yes

Months/years of operation: 2 1/2 years
 Staff size dedicated to Internet broadcast operations: 45 current employees
 Comments: Full support for audio and/or video webcasts.

MCI/Real Networks

Web address: <http://www.realnwork.net>
 Media formats supported: Real Audio, Video (C'mon)
 Max number of live users supported: 2,000 immediate, unlimited with planning
 Average number of live users on a broadcast: 300
 ISPs used: MCI
 IP multicast support: Yes
 Months/years of operation: Not Available
 Staff size dedicated to Internet broadcast operations: N/A
 Comments: Full support for audio and/or video webcasts.

OnlineTV — NYLIVE

Web address: <http://onlinetv.com>
 Media formats supported: WebCam
 Max number of live users supported: 2,000
 Average number of live users on a broadcast: 250
 ISPs used: Stealth, UUNET
 IP multicast support: N/A
 Months/years of operation: 3 years
 Comments: OnlineTV prides itself on a plug-in-less operation and stays away from Real Networks and NetShow.

UUNET/UUCast

Web address: <http://WWW.UU.NET/lang.en/products/uucast.shtml>
 Media formats supported: All
 Max number of live users supported: N/A
 Average number of live users on a broadcast: Up to 275,000
 ISPs used: UUNET
 IP multicast support: Yes
 Months/years of operation: Testing began in 1996 with Microsoft
 Staff size dedicated to Internet broadcast operations: N/A
 Support for live operations: Yes
 Content can be supplied as: Over the Net, analog dial-up, ISDN
 Highest speed supported: 128K ISDN
 Significant events broadcast: 1996 Fall COMDEX, CNN Headline News, AudioNet's Nationwide Radio◆

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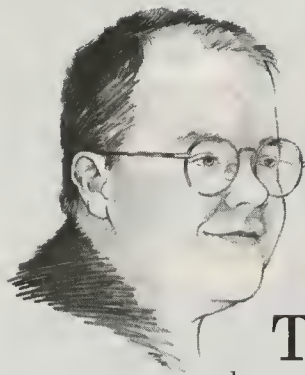
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EURO NEWS

Richard Baguley

MICROSOFT TAKES THE LEAD IN THE EU?

The seemingly never-ending attempts of Microsoft to take over the word (well, the browser market, anyway) seem to be finally paying off. A survey by the INETCO corporation (www.inteco.com/pd9801a.html) indicates that Microsoft's Internet Explorer may have overtaken Netscape's Navigator as the browser of choice. The survey (which was carried out in October 1997) shows that in France, Germany, and the U.K., more people are using Internet Explorer than Navigator. Of those surveyed who used either Navigator or IE in the U.K., 58 percent were using IE, while 42 percent were using Navigator. This contrasts with a similar survey done around this time last year, when only 44 percent were using Explorer. The same pattern is seen in Europe, with 60 percent in France and 54 percent in Germany going for IE, as opposed to 46 percent and 51 percent in April 1997. "Microsoft had almost caught up in April, but this is the first time we have seen them ahead in all three countries," said Tom Bachman, President of INTECO. He also blames the rise in the prevalence of Explorer on the increasing dominance of the Windows 95 and NT platforms in business — "Navigator was able to hold the lead for a while because it was established and was a superior offering in many respects — particularly for users on platforms other than Win95 and NT. But times have changed — NT and 95 penetration has increased, Internet Explorer got better and has become the natural selection for more and more users as a result."

However, it is worth pointing out that these figures exclude people who either didn't know or used other browser software. It's also worth remembering that it looked at the software that people use, not how much they use it or which web sites the access with their software. So, it could be that people had the software put onto their machines by systems administrators and may not actually use it themselves. Although there are probably plenty of people who don't know or care what browser software they use, I'd be rather surprised if there are many people out there who are using other browsers, even if there are a number of excellent alternatives, such as Opera (www.operasoftware.com) which are much smaller and more efficient.

Although this is the first survey to give Internet Explorer a solid lead, I think it's not going to be the last. Microsoft in the U.K. and Europe have been very aggressive in pushing IE, striking deals with ISPs for them to supply IE to their customers and generally making a lot of noise. Netscape, however, have been suspiciously quiet, with only a handful of staff in the U.K.

DO U.K. DIRECTORS KNOW ANYTHING ABOUT THE NET?

Speaking of unpleasant thoughts, a recent survey commissioned by Oracle makes worrying reading for Internet companies in the U.K. — it shows that U.K. Company directors lag far behind in their knowledge and perceptions of the Internet than their U.S. and Far East contemporaries.

There are numerous interesting statistics in the survey, but the basic gist is that U.K. company directors seem to be a long way behind others in terms of their perceptions and understanding of the Internet and IT in general. For instance, the survey reveals that only 64 percent of the U.K. directors use a computer at work, compared with 84 percent in Germany and 100 percent in both the U.S. and Singapore. With the Internet, the figures are even more striking — only 10 percent of those in the U.K. have Internet access at work, while 68 percent of those in Singapore have access. Interestingly enough, 88 percent of those in the U.S. have access, while only 4 percent of the Germans surveyed are online. Quite why so many Germans have PCs at work but only a few have Net access isn't clear, but it's probably a cultural thing — Germans simply aren't comfortable with e-mail.

This seems to be borne out by the analysis of what the directors actually use these PCs for — 91 percent of those who have PCs with Net access in the U.K. use them for sending and receiving e-mail, while only 43 percent of the Germans use them for this. Instead, 100 percent of the German respondents use them for word processing, perhaps indicating that they are happily sending each other letters in Germany while the U.K. directors are beginning to realize the benefits of e-mail. Unsurprisingly, 100 percent of the U.S. respondents use e-mail and 88 percent use their PCs to browse the Web. Again, the Germans seem to be a long way behind, with only 5 percent using the Web. Mind you, the U.K. can't exactly claim much in this department — only 16 percent of the U.K. respondents browse the Web. Singapore lags slightly behind the U.S., with 96 percent using e-mail and 68 percent browsing the Web.

WHO PAYS THE PIPER?

When it comes to making decisions about buying IT systems, the great majority of directors in all of the countries surveyed make decisions on the basis of a combination of cost and competitive advantage. But when it comes to working out who decides to buy what, the picture changes. In the U.K., 82 percent decide their IT strategy at board level, while only 25

Richard Baguley is the technical editor of *Internet Magazine*, the UK's best selling Internet magazine (www.emap.com/internet). His writing has appeared in numerous places, such as *Mac Format*, *Wired News* and *WebMaster*. He is an ex-editor of *Amiga Shopper* and *Internet Today*.

He lives in North London and hasn't yet worked out why everybody can't just get along and be friends. He denies that he is a hippy, as he doesn't have enough hair. He can be contacted at baggers@baggers.com

percent of the U.S. companies makes these decisions at such a high level. In fact, the U.K. had the highest percentage in this category, with Singapore closely behind at 80 percent and Germany at 50 percent. Interestingly enough, these figures didn't seem to bear any relation to the percentage of companies who had a director on the board who was responsible for it — only 48 percent of U.K. companies had this. This means that a rather worrying 34 percent of those who responded were making IT decisions at board level without anybody on the board who was directly responsible for implementing these or advising the board. In other words, in these companies the people who had to actually implement the decisions of the board had no direct voice on the board, which could be a recipe for disaster.

Although the figures differ, the pattern is much the same in other countries — 21 percent in the U.S. (where 30 percent decide IT at board level), and 25 percent in Germany, where 50 percent of company boards make their IT decisions. The only one to buck the trend is Singapore, where 70 percent have a board member directly responsible for IT, while 80 percent decide IT policy at board level. When it comes to which company director is responsible, the pattern changes again. In the U.K., it's most likely to be the finance director (at 84 percent), while the U.S. favors a specialist IT director (66 percent), as does Singapore, with 84 percent having a dedicated IT director. Translating these figures for the U.K. shows a rather worrying fact — the person most likely to be deciding or recommending IT strategies to the board is the person who watches the purse strings. While I'm sure that most finance directors are good people, using IT for the benefit for the company isn't usually their primary aim — keeping the cost down is.

This is borne out by the final section of the survey, which looks at whether directors think their companies gain a competitive advantage by using IT effectively. A rather depressing 48 percent in the U.K. think they do, while a far more healthy 78 percent of U.S. directors said yes. However, the highest percentage as in Singapore, where 84 percent said that, when used effectively, IT could give their companies a competitive edge.

Given these figures, it's not surprising that the director general of the U.K. Institute of Directors criticized U.K. directors for being "like Neanderthals, slow-witted and quite unable to compete with more adaptive, versatile competitors." Hopefully the directors of U.K.

companies will heed this warning and evolve instead of being beaten senseless by their more advanced counterparts, although this remains to be seen. Despite issuing such dire warnings about how important it is to keep up with IT, the Institute of Directors doesn't have a web site...

BON JOUR LE AOL ET LE COMPUSERVE FRANCE

France isn't a country that's been widely regarded as being at the forefront of Internet innovation. Partly thanks to a highly successful online service called Minitel, the Internet has been slow to catch on — people simply don't need it. Minitel allows users to send and receive e-mail, as well as providing a nationwide directory service for finding people and businesses. However, the Internet is now beginning to catch on, and several European countries have recently got together to help promote that growth by launching French versions of both AOL and CompuServe.

As I predicted several months ago, the two services are aimed at very different markets — AOL at the home user and CompuServe at the business. AOL Europe is turning into an increasingly important force in the European ISP market, with over 950,000 subscribers throughout their various European operations, including the U.K. and Germany. Both AOL and CompuServe France are joint ventures between AOL International, Bertelsmann Europa

GMBH (which owns a majority stake in AOL Bertelsmann online, the parent company of all the European AOL and CompuServe operations) and the French company Cegetel. The biggest ISP in France is France Telecom, the national telecom operator. The French telecoms market has only just been deregulated, in line with the rest of Europe.

This news comes amidst rumors that AOL is considering getting rid of staff from CompuServe, particularly in the technical support operations. It's thought that AOL may be looking to bring together the technical support operations of AOL and CompuServe in Europe to keep costs down. ♦

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Notes From The Underground by Wallace Wang

CIRCUMVENTING GOVERNMENT CONTROL THROUGH THE INTERNET

China and Cuba are two of the last remaining strongholds of communism control, so if they just claimed they were radical right-wing conservative Republicans, they could legally declare themselves a democracy. But while both countries have opened their borders to increased tourism and trade, their political intolerance toward dissent has spurred activists to fight back using the Internet.

To reach as many people as possible, many anti-Cuba and anti-China web sites provide information in two languages: English and Spanish or English and Chinese. By providing information in Spanish or Chinese, both types of web sites hope to reach those fortunate few citizens, trapped within the Cuban or Chinese borders, who have access to the Internet as well as people from the rest of the world.

One of the more prominent anti-Castro groups is the Cuban American National Foundation (CANF) (www.canfnet.org). CANF is an independent, non-profit organization that advocates respect for human rights, freedom of thought and expression, freedom of religion, the right of the people to freely elect their government, the right to private property, free enterprise, and economic prosperity with social justice.

Although respect for human rights is sorely lacking in nearly every part of the world, CANF provides reports of human rights violations written by Cuban refugees so you can read firsthand accounts of government-sponsored torture. In addition, CANF provides articles about religious repression in Cuba and debates about U.S. foreign policy toward Cuba so people will know more about it than the fact that it makes the best cigars.

Of course, posting anti-Cuban information on web sites won't do much good to help the people actually living in Cuba. Cuba's antiquated telephone system, scarcity of computer equipment, and lack of Internet providers prevents most Cubans from browsing web sites, sending e-mail, or posting messages in newsgroups such as soc.culture.cuba.

To give the Cuban population another voice and provide it with uncensored overseas information, another non-profit organization, called CubaNet, runs their own web site (www.cubanet.org) outside of Cuba. CubaNet not only posts information it receives from Cuba's underground democracy movement, but it also regularly e-mails information into Cuba. For many Cubans, CubaNet may be the only link to the outside world.

Another group working toward the Cuban government's demise is the Free Cuba Foundation (www.fiu.edu/~fcf), a non-profit, and non-partisan organization working toward establishing an independent and democratic Cuba using non-violent means. Like CubaNet, the Free Cuba Foundation provides information about Cuba and posts information from Cuban human rights and democracy activists.

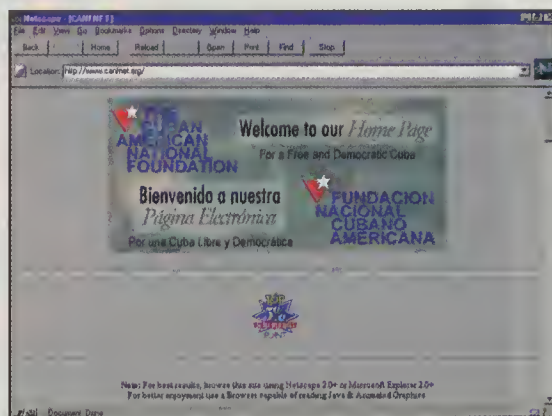
Still another organization, the Cuban Committee for Democracy (CCD) operates a web site (www.us.net/cuban) to promote a peaceful, negotiated transition to democracy in Cuba. (After the disastrous Bay of Pigs invasion, not many anti-Castro groups seem anxious to advocate a military overthrow of Cuba.) The Cuban Committee for Democracy represents the more moderate sector of the Cuban-American community, whose voice may not be represented by other existing organizations.

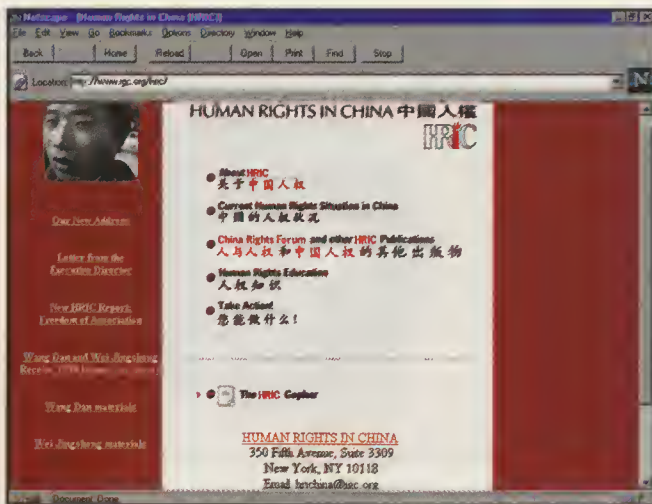
Like Cuba, China has also adopted rules to restrict the use of the Internet to preserve the government's monopoly on information. China maintains tight control over the national telecommunications system through which all Chinese Internet providers must go. As a result, the Chinese government has permanently blocked access to many web sites including those of foreign newspapers (such as *The New York Times*) and sites deemed pornographic (such as *Playboy* magazine).

Despite these restrictions, Chinese citizens still manage to access forbidden web sites. A New York-based site, Human Rights in China (HRIC) (www.igc.apc.org/hric) or (www.HRChina.org), claims dozens of "hits" each week from people

Wallace Wang is the author of *CompuServe For Dummies*, *Visual Basic For Dummies*, *More Visual Basic For Dummies*, *Microsoft Office 97 For Dummies*, and *More Microsoft Office 97 For Dummies*.

When not working with computers, he performs stand-up comedy and has appeared on A&E's *Evening at the Improv* TV comedy show. He can be reached via e-mail at 70334.3672 @compuserve.com, bothekat@aol.com, bo_the_cat@msn.com, or bothecat@prodigy.net





inside China. Founded by Chinese scientists and scholars in March 1989, HRIC monitors the implementation of international human rights standards in the People's Republic of China and carries out human rights advocacy and education among Chinese people inside and outside the country.

Another web site that the Chinese government bans its citizens from accessing is the China News Digest (CND) web site (www.cnd.org:8000). CND is a non-profit organization registered in the State of Maryland and operated by volunteers. Unlike other organizations with a political agenda, CND

strives to provide timely and balanced news coverage on China and related affairs.

While the Chinese government can restrict access to particular web sites, it can't screen the flurry of e-mail that crosses the Chinese borders through the Internet every day. Exploiting this weakness, Chinese dissidents have been writing and editing a weekly electronic magazine called *Tunnel* (www.geocities.com/SiliconValley/Bay/5598).

These dissidents send their articles from inside China to an e-mail account in the United States where the magazine is then e-mailed back into China. By using this roundabout method of distribution, the magazine hopes to prevent the Chinese government from identifying the writers and blocking the magazine's distribution within China's borders.

If Cuban and Chinese citizens can find creative ways to avoid government oppression, think of what you can do to circumvent any restrictions imposed by your government. As long as the Internet continues crossing international boundaries, no single national government will ever be able to control what its citizens can read or write. Historically, free speech has always found a way to survive. Unfortunately, so has the futile belief that governments should restrict the thinking of its citizens as well. ♦

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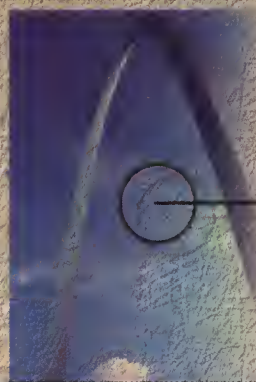
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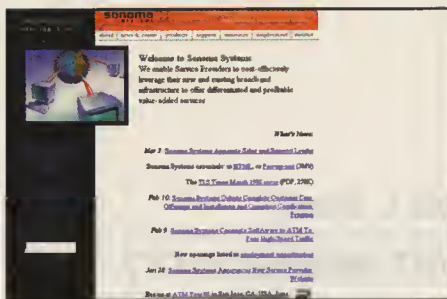
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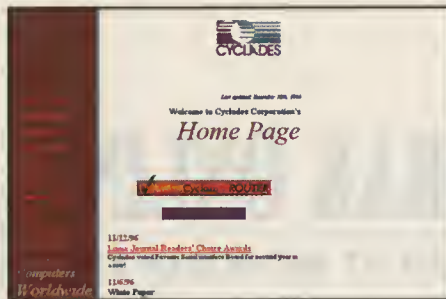
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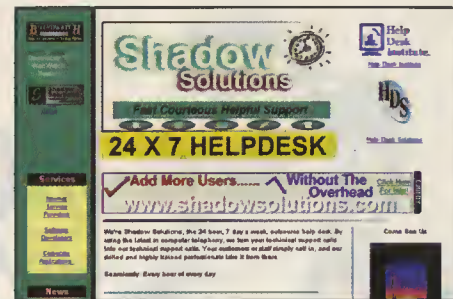
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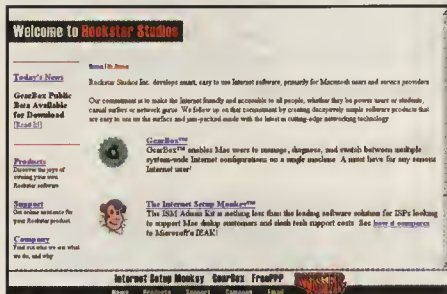
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DVORAK ONLINE

by John C. Dvorak

SATANISM AT MICROSOFT? OR JUST MEDIOCRITY?

Not really, but weirdness abounds and I am warning one of the new content sites which Microsoft is sponsoring that it will be in a heap of trouble if right-wing Christians get a load of it! In fact, there are a host of new Microsoft sites that are just plain wacky.

First of all, as a group, these sites should be dubbed the content-free zone. There is no content to speak of. Or, it's seriously lacking. And when there is content (one lone site) you find technical problems that are inexcusable. But I've harped on this before. Let's talk about these sites in general.

I stumbled on to these new sites by accident as I was perusing certain online Microsoft documents and was looking at the online magazine Slate (www.slate.com), where one spot was obviously beta testing web banners plugging these new sites. If you kept hitting the refresh button you'd get new banners until you found most of the new sites. (Yes, I have no life).

The most bizarre new site is Satori (<http://satori.msn.com>). This is a pure New Age nut-ball site with all the right buzzwords and all the right come ons. The opening of the site asks the rhetorical question WHO AM I? as a spinning query pops up on the screen on a black background. It deteriorates from there.

There are an excessive number of spooky symbols and these sites could easily be mistaken for satanic as a creepy RED hand moves up the screen while various witchcraft-like symbols roll around. A key falls into the creepy red hand. Ehhh!

The site has all the right New Age buzz terms such as "human potential" and "self realization." There is a dubious business angle too, which I found irritating. The opening screen gives this all away. The subhead under the Satori Logo, which incorporates at least two odd symbols, says: "Welcome to Satori, a weekly workshop devoted to personal development, spirituality, and integrated health. Explore yourself, your relationship, your career, and your health with eight leading experts and innovators in the field of human potential." Lots of New Age crapola crammed into a couple of sentences.

Then they show a slew of unusual images including an odd, creepy one where a blonde woman is about to kiss what appears to be an androgynous, black, African native. What is the point of this? AND is it a man or woman? You can't tell. Is this a cross-racial,

gay kiss? Or what? Not that I care, but apparently somebody does care otherwise this wouldn't be showcased this way. There is some dubious agenda here and exactly why Microsoft is sponsoring such a thing is a mystery.

One of the highlights on this site is New Age executive business coaching. I get the feeling that some New Age touchy-feely "seminar" organization has infiltrated Microsoft. There is a lot of positive stuff about horoscopes too. Gee, I'm so glad to see Microsoft get on THAT modern bandwagon. One of the "activity sets" was called Enterprise Control. Here is the blurb, you tell me what they are up to:

"The Enterprise Control activity set represents interests that are realized through having ultimate decision-making authority for an enterprise. Individuals interested in this activity set enjoy the authority and control of resources that enable them to actualize a business vision. Whether or not they enjoy managing people, they find satisfaction in making the decisions that will determine the direction taken by a work team, a business unit, a company division, or an entire organization. This also includes individuals who enjoy autonomous roles in sales."

Sounds like bullcrap to me.

Ok, enough about the creepiest of sites. Let's move on to Underwire (<http://underwire.msn.com>), the women's magazine. This issue highlighted RAGE. My wife took one look at this site and said it should be dubbed PMS monthly. She wondered if any women actually had anything to do with what she considered an insulting site. I had no opinion. Well, except that it seemed silly. There was even a pop quiz for you girls out there done in PINK! I passed on it.

Then there is Spike's World! This is a gamers site at <http://spike.msn.com> that will roll out various cheat sheets and game tips for the major game platforms. There wasn't a lot on the site, yet, and I wonder if they will ever catch up to the myriad of gamer sites already out there. I just can't see Microsoft being sincere about Nintendo 64 cheat codes.

But hey? Onward, expect to find the Microsoft Money Insider — a site that is devoted to financial tips. While much of the site had weak content there are actually good articles in here. The irony here is the site is simply screwed up. Let's start with the weak articles such as a Janet Luhrs' piece on "How Much of Your Time is Spent Pursuing an Image." She writes

In addition to his weekly syndicated radio call-in show, *Software/Hardtalk*, syndicated newspaper columns, magazine writing for *MacUser*, *PC Computing*, *DEC Professional*, *Information Technology*, and his featured "Inside Track" column in *PC Magazine*, Dvorak is the author of several best-selling books, including *Dvorak's Inside Track to DOS & PC Performance*, *Dvorak's Guide to PC Telecommunications*, and *Dvorak's Inside Track to the Mac*. John can be reached at dvorak@dvorak.org

that she was happy living at home writing, then got into a situation where she had to dress up, and then went back to the simple life, and guess what? She liked the simple life better. Holy Moly! This is the woman who produces the Simple Living Newsletter. Exactly why this was in the LIVING WELL section is beyond me. To me, living well is wearing a nice suit and staying in a suite at the Ritz. I already spend too much time in jeans at home to want to extol its virtues. Anyone can lounge around the house. So what?

But on this site I did find a good article called "A New Art Form — Shopping for Art Online." In it were excellent links. But dig this, when you clicked on a link and then hit the back button, it blew you out of the article. You had to drill back down to get back to the article you had just linked out of. (And YES I use Explorer). This was so bush league I couldn't believe it. It stemmed from the ludicrous over-use of frames (three of them on the page) and the way the back page is referenced. This problem is a serious pain in the ass as far as I'm concerned. Eh!

After this site I ran into the Zone.com (<http://zone.com>) which is Microsoft's new attempt to get into the online gaming scene. Good luck with that. It's maybe the best looking of these new sites. From here look for Oneclick (<http://oneclick.msn.com>) a site that looks like a cross between grunge and 1950 contempo. As far as I can tell, it had no useful purpose. Check it out and YOU tell me.

Finally, there was <http://computingcentral.com> an attempt by Microsoft to compete with ZDnet or C/Net or who knows who. It's got nothing but links to people who actually do some work.

While the company has done a credible job with sites such as Expedia and Car-talk, this new batch looks like a big waste of money. While Microsoft scares the bejiggers out of software companies, it sure isn't scaring any media companies with this crap. ♦

DVORAK'S RECIPE NOOK

PICKLED TURNIPS

When I was a kid there was a neighbor lady who made large jars of pickled turnips the likes of which I have not duplicated or ever tasted again. They were large quartered pieces with a flavor of Apple Cider vinegar. Although I've done every imaginable recipe (including the ones below) I've never made anything close to this pickle I recall as a child. Any odd pickled turnip recipes will be welcome at recipe@dvorak.org.

Anyway, it's possible that this woman was Arabic. It's the Arabs who seem to love to pickle turnips. Here are two examples taken from online sources.

THE FIRST IS CALLED KABES EL LIFT

2 cups water
1 cup vinegar
2 tsp. salt
1 beetroot
Several garlic cloves

Add ingredients to large jar and let pickle for 10 days or more.

According to the document, "Big glass jars of these rose colored pickles decorate the front windows of many Arab restaurants in the Middle East. They are easily prepared and are very good with meza."

Then there is:

LIFT MAKBOUSE

Ingredients:

2 pounds turnips
2 large beetroots
1 hot pepper
5 cups of Pickling Solution:
1/2 white vinegar, 1/2 water, 5 tablespoons salt

Instructions:

Blanch turnips and beets in boiling water and then peel them. Slice into quarters. Put in a large sterile glass jar with the hot pepper. Cover with the pickling solution and seal with an airtight lid. Leave for 10 days before using. Celery leaves and garlic cloves may be substituted for the hot pepper or added in addition to the pepper. Another variation calls for parboiling the turnips rather than just blanching. In the recipe I was eating as a kid I clearly recall the skins being intact and I don't recall the turnips as being beet red.

The Japanese make pickled turnips from a completely different angle. But for now experiment with these Middle Eastern recipes. Turnips have a unique flavor that is conducive for pickles. This is one great tasting root. ♦

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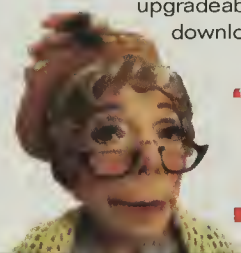
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| <input type="checkbox"/> Corporate/MIS | <input type="checkbox"/> Government |
| <input type="checkbox"/> Hardware Manufacturer | <input type="checkbox"/> Education |
| <input type="checkbox"/> Software Publisher | <input type="checkbox"/> Other _____ |
| <input type="checkbox"/> Wireless/Satellite | <input type="checkbox"/> Telco |

Cancellations must be received in writing to ONE, Inc. by August 17, 1998. Refund amount is the purchase price less \$75 processing fee.

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Jack Rickard

Jack Rickard
Editor Boardwatch Magazine

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